AIR FORCE AND NAVY ROCKET-LAUNCHER PROGRAM

(PART 2)

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON GOVERNMENT OPERATIONS HOUSE OF REPRESENTATIVES

EIGHTY-FIFTH CONGRESS

SECOND SESSION

JULY 14 AND 15, 1958

UNIVERSITY OF MICHIGAN
OCT 28 1958
MAIN READING ROOM

Printed for the use of the
Committee on Government Operations

UNITED STATES
GOVERNMENT PRINTING OFFICE
28943 WASHINGTON : 1958

COMMITTEE ON GOVERNMENT OPERATIONS

WILLIAM L. DAWSON, Illinois, *Chairman*

CHET HOLIFIELD, California
JOHN W. McCORMACK, Massachusetts
JACK BROOKS, Texas
L. H. FOUNTAIN, North Carolina
PORTER HARDY, JR., Virginia
JOHN A. BLATNIK, Minnesota
ROBERT E. JONES, Alabama
EDWARD A. GARMATZ, Maryland
JOHN E. MOSS, California
JOE M. KILGORE, Texas
DANTE B. FASCELL, Florida
MARTHA W. GRIFFITHS, Michigan
HENRY S. REUSS, Wisconsin
OVERTON BROOKS, Louisiana
ELIZABETH KEE, West Virginia
KATHRYN E. GRANAHAN, Pennsylvania

CLARE E. HOFFMAN, Michigan
R. WALTER RIEHLMAN, New York
CECIL M. HARDEN, Indiana
CHARLES B. BROWNSON, Indiana
GEORGE MEADER, Michigan
CLARENCE J. BROWN, Ohio
GLENARD P. LIPSCOMB, California
VICTOR A. KNOX, Michigan
WILLIAM E. MINSHALL, Ohio
EDWIN H. MAY, Connecticut
ROBERT H. MICHEL, Illinois
FLORENCE P. DWYER, New Jersey
JACK WESTLAND, Washington

CHRISTINE RAY DAVIS, *Staff Director*
ORVILLE S. POLAND, *General Counsel*
JAMES A. LANIGAN, *Associate General Counsel*
HELEN M. BOYER, *Minority Professional Staff*
J. P. CARLSON, *Minority Counsel*

MILITARY OPERATIONS SUBCOMMITTEE

CHET HOLIFIELD, California, *Chairman*

EDWARD A. GARMATZ, Maryland
JOE M. KILGORE, Texas
DANTE B. FASCELL, Florida
MARTHA W. GRIFFITHS, Michigan

R. WALTER RIEHLMAN, New York
GLENARD P. LIPSCOMB, California
WILLIAM E. MINSHALL, Ohio

MEMBERS EX OFFICIO

WILLIAM L. DAWSON, Illinois
CLARE E. HOFFMAN, Michigan

HERBERT ROBACK, *Staff Administrator*
EARL J. MORGAN, *Chief Investigator*
CAREY BREWER, *Senior Defense Specialist*
PAUL RIDGELY, *Investigator*
ROBERT J. MCELROY, *Investigator*

DEPOSITED BY THE
UNITED STATES OF AMERICA

CONTENTS

Statement of—
Hines, Rear Adm. Wellington T., assistant chief, Bureau of Aeronautics for Procurement; accompanied by Lt. Comdr. R. A. Spargo, director, Purchase Division, Navy Procurement Office, Washington, D. C.; M. G. Evans, engineer, Weapons Application Branch, Engineering Department, NOTS, Inyokern, Calif.; Lee Morgan, project engineer, Bureau of Aeronautics; and Lyle Bercier, armament technician, Bureau of Aeronautics ..... Page 682
Thurman, Maj. Gen. William T., United States Air Force; accompanied by Col. Jan. M. Laitos, APGC; Maj. William H. Brassfield, Directorate of Development, APGC; Lt. L. D. Gschwing, Directorate of Development, APGC; Olan W. Prosser, contracting officer, St. Louis APD; John Gibbs, contracting officer, AMC; and C. L. Bonkofsky, chief, Ammunition and Weapons Section, Programs and Requirements Division, Directorate of Supply, Headquarters, Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio 743
Letters, statements, etc., submitted for the record by—
Dixon, Rear Adm. R. E., Chief, Bureau of Aeronautics, Department of the Navy: Letter from Rear Adm. R. E. Dixon, to Hon. Chet Holifield, August 1, 1958 741
Production delays during performance of Contract N600 (A) 42125 741
Fisher, Maj. Gen. W. P., United States Air Force, director, Legislative Liaison: Letter from Maj. Gen. W. P. Fisher, to Hon. Chet Holifield, July 25, 1958 770
Holifield, Hon. Chet, a Representative in Congress from the State of California, and chairman, Military Operations Subcommittee: Excerpt from statement of Rear Adm. Wellington T. Hines 695
Morgan, Earl, chief investigator, Military Operations Subcommittee: Contractor advice to the Air Force, April 14, 1958, re tube failures.
Excerpt of letter dated April 28, 1958, re bulkhead failure 713
Excerpt of letter from Admiral Russell, December 19, 1956, re specification Mil–R–19168 ..... 688, 689
Excerpt of letter from Maj. Gen. W. O. Senter, director of procurement and production at AMC, to Maj. Gen. Robert W. Burns, March 6, 1958 760
Excerpt of letter from the commander of the Air Force installation at Eglin, to the commander of the Air Materiel Command, April 4, 1958, re Air Force contract for the LAU/3A 709, 710
Excerpt of letter from the inspector of naval material, San Francisco, Calif., to the Be Ge Manufacturing Co., June 19, 1957 .. 708
Reply of contractor to the Air Force, April 16, 1958, re tube failures 710
TWX from Ogden Air Materiel Area, to AMC, March 7, 1958 .. 760
Roback, Herbert, staff administrator, Military Operations Subcommittee:
Excerpt from contract, revision 2 703
Letter from Herbert Roback, to Capt. John S. McCain, Jr., July 15, 1958 716
Memorandum from Chief, Bureau of Aeronautics, to Chief of Legislative Liaison, July 22, 1958, re Military Operations Subcommittee request for information on Aero 7D rocket launchers 717

Letters, statements, etc.—Continued
Roback, Herbert, staff administrator—Continued
Memorandum from Chief, Bureau of Aeronautics—Continued
Contract modification—Be Ge Manufacturing Co., Leavesley Road, Gilroy, Calif.: Page
Modification No. 11, April 26, 1957 718
Modification No. 12, August 5, 1957 720
Modification No. 13, August 13, 1957 722
Modification No. 14, August 28, 1957 724
Modification No. 15, September 23, 1957 729
Modification No. 16, October 28, 1957 731
Modification No. 17, October 29, 1957 733
Modification No. 18, November 1, 1957 734
Modification No. 19, November 20, 1957 736
Modification No. 20, May 2, 1958 738
Navy's answer re production of the items to be furnished under the contract 701
Statement re production of the items to be furnished under contract 765
Spargo, Lt. Comdr. R. A., director, Purchase Division, Navy Procurement Office, Washington, D. C.: Excerpt from contract 703
Thurman, Maj. Gen. William T., United States Air Force: Statement re the Government giving contractor a notice in writing of approval or disapproval of preproduction samples 765

AIR FORCE AND NAVY ROCKET-LAUNCHER PROGRAM

(Part 2)

MONDAY, JULY 14, 1958

HOUSE OF REPRESENTATIVES,
MILITARY OPERATIONS SUBCOMMITTEE,
OF THE COMMITTEE ON GOVERNMENT OPERATIONS,
Washington, D. C.

The subcommittee met, pursuant to call, at 10 o'clock a. m., in the hearing room, George Washington Inn, Hon. Chet Holifield (chairman of the subcommittee) presiding.

Present: Representatives Holifield (presiding), Fascell, and Lipscomb.

Also present: Herbert Roback, staff administrator; and Earl Morgan, chief investigator.

Mr. HOLIFIELD. The subcommittee will be in order, please.

Take your seats, gentlemen.

These hearings were called to bring the Military Operations Subcommittee up to date on the developments in the procurement of airborne expendable rocket launchers by the Navy and the Air Force.

Previous hearings were held by this subcommittee in 1956 and 1957. We hope to present a report to the Congress before this session is ended, and we find it necessary to obtain certain additional information.

The subcommittee staff has been following this program closely, but it will be helpful to have the information officially entered into the record.

Today we are hearing witnesses from the Department of the Navy. The Navy has outstanding one production contract with the Be Ge Manufacturing Co. of Gilroy, Calif., for the Aero 7D rocket launcher, which is a 19-round launcher.

Previous production contracts were concerned with the Aero 6A, which is a 7-round launcher.

At the Navy's last appearance before this subcommittee on the matter of rocket launcher procurement in March 1957, the Be Ge contract was about 10 months old but no significant production had been achieved. The Navy had approved 150 preproduction samples in February 1957, about 4 months after the contract delivery date for the samples. The total contract called for approximately 44,000 units.

Today we will hear from the Navy on the status of this contract and on other matters of interest to the subcommittee.

Tomorrow we will hear from the Air Force.

Now, Admiral Hines, I see you have a prepared statement.

Would you like to give it at this time?

Admiral HINES. Yes, sir, Mr. Chairman.

STATEMENT OF REAR ADM. WELLINGTON T. HINES, ASSISTANT CHIEF, BUREAU OF AERONAUTICS FOR PROCUREMENT; ACCOMPANIED BY LT. COMDR. R. A. SPARGO, DIRECTOR, PURCHASE DIVISION, NAVY PROCUREMENT OFFICE, WASHINGTON, D. C.; M. G. EVANS, ENGINEER, WEAPONS APPLICATION BRANCH, ENGINEERING DEPARTMENT, NOTS, INYOKERN, CALIF.; LEE MORGAN, PROJECT ENGINEER, BUREAU OF AERONAUTICS; AND LYLE BERCIER, ARMAMENT TECHNICIAN, BUREAU OF AERONAUTICS

Admiral HINES. I am Rear Adm. Wellington T. Hines, Assistant Chief of the Bureau of Aeronautics for Procurement.

We are here today in response to your request to discuss the procurement of Aero 7D aircraft rocket launchers.

In accordance with your further request, we have asked the commander, Naval Ordnance Test Station, Inyokern, Calif., to have a representative present, and the officer in charge of the Naval Purchasing Office, Washington, to have the contracting officer, Lt. Comdr. R. A. Spargo, with us.

Let me briefly review the pertinent facts:

In 1955, the Naval Ordnance Test Station, under a Bureau of Aeronautics project, completed the development of the Aero 7D aircraft rocket launchers.

This equipment is designed as a combination shipping container-launcher for 19, 2.75-inch folding fin aircraft rockets, and is jettisoned from the aircraft after one use. It replaced a smaller launcher, the Aero 6A, which had a capacity of only seven rockets.

Drawings and specifications were prepared for the equipment, and an advertised request for bids was released in February 1956 by the Naval Purchasing Office, Washington, D. C., for the production of a quantity of 44,263.

The Be Ge Corp., of Gilroy, Calif., was the low responsive bidder to this request, and a contract was therefore awarded on June 7, 1956, to that bidder at a unit price of $90.51 per launcher.

The delivery schedule, which is a part of the contract, calls for completion of production in August 1957. The contractor, however, experienced delays in reaching quantity production. The difficulties were of two general kinds:

One, the establishment of reliable subcontrators, particularly for the plastic-impregnated paper tubes which hold each rocket; and, secondly, the expected problem of turning the prototype equipment into a production item that would fit the particular production practices which the contractor and his suppliers employ.

As of last Friday, July 11, the contractor has produced and shipped a total of 13,391 launchers.

We have continued throughout the contract to test samples selected from each production lot in the laboratories of the Dayton T. Brown Co., and, subsequently, have fired rockets from them at the Naval Ammunition Depot, Shumaker, Ark.

All production lots, on which testing has been completed, have met contract requirements and have been accepted by the Navy.

The situation now, therefore, is that we have a satisfactory equipment, with the delivery of total contract quantities expected in January of 1959. Changing tactical requirements and the reductions in the numbers of operating Navy aircraft have combined to make this late delivery of the product acceptable.

It was found necessary, as I have suggested, to authorize changes in the launcher design during early stages of production. Most of them have been what we call changes in callouts in the drawings, to correct minor discrepancies between laboratory and production designs as the latter developed during the contractor's early work. Some changes have been authorized to simplify the equipment, with the result that we now have a more readily producible item to manufacture.

Both the delivery schedules and the engineering changes, with their possible impact on the contractor's cost and price have been the subjects of recent meetings between the Navy and representatives of the Be Ge Corp. While the meetings have been productive, no price or delivery changes have been authorized.

Because this matter is still in negotiation, and any statement here today could tend to prejudice its outcome, I shall not speculate on the possible future courses of action, should we fail to reach agreement on what can and should be done under the contract.

Navy representatives here include Mr. Lee Morgan, the project engineer from the Bureau of Aeronautics; Mr. Lyle Bercier, with the Maintenance Division of the same bureau; Mr. M. G. Evans from the Naval Ordnance Test Station, Inyokern; Lt. Comdr. R. A. Spargo, the contracting officer from the Naval Purchasing Office, Washington, D. C.

We shall be glad to attempt to answer any questions you may have.

Mr. HOLIFIELD. Thank you, Admiral.

This has been under consideration by this committee, as I said in the opening statement, for some time, and it is necessary as far as the records of our committee are concerned, to conclude these hearings and present the report on the activities of the committee to the Congress.

Therefore, we have a number of questions which we'll ask this morning in order that we may have a completion of the record of our hearings up to date.

What is the total number of launchers delivered under the contract to date, Admiral?

Admiral HINES. As of last Friday, sir, there were 13,391.

Mr. HOLIFIELD. Have any launchers been rejected during either laboratory, firing, or field tests?

Admiral HINES. Yes, sir. Some of them have, and I would like to ask Mr. Morgan to go into that.

Mr. LEE MORGAN. We have rejected some samples in firing tests at Shumaker, Ark.

When the launchers representing that lot were resampled and retested, they successfully passed the test, and the lots were accepted.

Mr. EARL MORGAN. Could we get some further information on that? Could you give us the identity of the lots, the dates they were fired, and rejected, and when they were subsequently fired, and approved?

Mr. LEE MORGAN. We have supplied you with copies of the test reports. I can't give you the dates, unless you want me to dig through them right now.

Mr. EARL MORGAN. We would like for you to furnish that information.

(See p. 740 for information subsequently furnished.)

Mr. ROBACK. Do you know how many lots were rejected?

Mr. LEE MORGAN. I believe three during the firing tests.

Mr. ROBACK. Were there no lots rejected at the laboratory because of defective fairings?

Mr. LEE MORGAN. We have rejected some lots for fairing failures; yes.

Mr. ROBACK. Would you supply us the identity of the rejected lots, both in laboratory and Shumaker testing, and indicate the nature of the reasons for the rejection?

Mr. LEE MORGAN. Yes.

(See p. 740 for information subsequently furnished.)

Mr. ROBACK. Now, do we understand that after retesting of the lots that were rejected, both in laboratory and field testing, they were accepted?

Mr. LEE MORGAN. That is correct.

All launchers manufactured to date have been accepted.

Mr. EARL MORGAN. In May of this year, lots 120 through 124, I believe, were rejected by Dayton T. Brown for fairing failures or deficiencies in the fairing.

Can you assure us that those lots have been retested and have been approved?

Mr. LEE MORGAN. I can.

Mr. ROBACK. By the way, Mr. Morgan, when the lots are tested at Dayton T. Brown, they don't really make a decision as to whether they are rejected or not. They merely present to you the results of their testing, and you make the decision; is that right?

Mr. LEE MORGAN. That is right.

Mr. EARL MORGAN. And have any of these launchers been supplied to the fleet or to other activities?

Mr. LEE MORGAN. Yes, sir; they have.

Mr. EARL MORGAN. Have you received any of the reports from the field?

Mr. LEE MORGAN. We have received reports from other testing activities such as the Naval Air Test Center and the Naval Ordnance Test Center.

We have supplied you with copies of those reports earlier. We have not received, to my knowledge, any reports from the fleet activities which have this equipment and are using it.

Mr. EARL MORGAN. What was the purpose of the testing at Patuxent?

Mr. LEE MORGAN. New aircraft have certain armament equipment specified that they will carry satisfactorily. These may be missiles; they may be guns, bombs, or rocket launchers.

We supplied launchers to the test center to permit evaluation of these aircraft to determine whether they were successful in carrying the armament specified for the aircraft.

Mr. EARL MORGAN. What was the purpose of the testing at NOTS, China Lake?

Mr. LEE MORGAN. NOTS—we have not sent any to NOTS recently. Early in production, we sent launchers to NOTS. They were used in demonstration, and also the further check of the launchers to see that they were performing satisfactorily under the conditions under which NOTS may have flown them and fired them.

Mr. EARL MORGAN. This isn't considered a part of the testing of the production samples, is it?

Mr. LEE MORGAN. That is over and above the testing of the samples. We have submitted from time to time to the Naval Air Test Center production samples direct from the laboratories of the Dayton T. Brown Co. to have flight tests and firing tests performed.

Mr. EARL MORGAN. Are these the only two places that you have had firing tests other than Shumaker?

Mr. LEE MORGAN. I believe some launchers were fired in a fleet air gunnery meet at El Centro, Calif., several times.

Mr. HOLIFIELD. Have any specifications been waived since the original grant of the contract?

Mr. LEE MORGAN. Yes, sir.

Mr. HOLIFIELD. Will you explain what they were?

Mr. LEE MORGAN. We have from the beginning been forced to waive certain of the requirements for the tube. We found out when we embarked on this program that the specification covering requirements for compressive strength tubes to the standards should have had—parenthetically to paragraph 33423—the notation "1-inch sample," the strength required of 7,000 pounds per square inch applied to a 1-inch diameter sample.

Since the tubes that we are procuring the 2¾ inches in diameter, the strength that we obtained from those tubes is on an average of 4,000 to 7,000 pounds per square inch.

We immediately granted this waiver, because the specification did not have the parenthetical comment that it should have.

We also permitted an increase in the water absorption possible under paragraph 33422. The specification required 15 to 18 percent. We waived that to a permissible 25 percent.

Mr. HOLIFIELD. In other words, you found out that your original specifications could not be met by the contractor, and you liberalized them?

Mr. LEE MORGAN. Only in the area of the compressive strength. The original tube specified—or the original tubes—did meet all requirements with the exception of this clarification on the diameter of the sample that should be used in testing.

Mr. HOLIFIELD. You mean you used a 1-inch sample to test, when you planned to use a 2.75-inch tube in the real product?

Mr. LEE MORGAN. For the laboratory testing, the specification covering the tube was developed against a 1-inch-diameter sample, and we should have so indicated in the specification.

Mr. HOLIFIELD. Why was that?

You never had such changes before when the tubes were tested before for the Aero 6A and 7A. They were tested—the same size was tested as the size used.

Mr. LEE MORGAN. We determined later, from the Cleveland Container Co., which is the concern which developed our first tube for us, that this strength requirement should have been specified against

a 1-inch-diameter sample. We did not have that information at the time the specifications were prepared.

Mr. HOLIFIELD. Was this a change in compression over the tests that you required on the 7A and the 6A?

Mr. LEE MORGAN. We did not have this test specified in the 6A.

Mr. HOLIFIELD. But in the 6A and 7A you used the sizes which are actually used in military missions for all test purposes?

Mr. LEE MORGAN. As I say, we did not specify a compressive strength that the tube should withstand in the 6A procurement. We have never produced a 7A launcher, Mr. Chairman; only the 7D.

Mr. ROBACK. Mr. Morgan, on the compressive strength specification of the 7D, you say that the thing was clarified?

Mr. LEE MORGAN. I didn't understand you.

Mr. ROBACK. You say that the situation was clarified.

Now, who made the error in the compressive strength?

Was it the Century Engineers, as the developer contractor, or the Navy, in examining specifications, or was that a mutual error?

Mr. LEE MORGAN. I would prefer to think of it as a mutual error. However, I'll not shirk the responsibility here.

I wish it had been in the specification. It was not.

Mr. ROBACK. And Cleveland Container, as was brought out at a previous hearing, all this time was insisting that all they were prepared to deliver was the commercial variety of the tube, the Clevelite L–20, so that, in fact, the waiver of the specification was only to make it possible for Cleveland Container to deliver its Clevelite L–20 tube?

Mr. LEE MORGAN. No, sir.

Mr. ROBACK. Did Cleveland Container deliver other than the Clevelite L–20 tube after you waived the specification?

Mr. LEE MORGAN. I don't know what the Clevelite L–20 tube is.

To my knowledge, the only tube that Cleveland has delivered to Be-Ge was their commercial tube.

Mr. ROBACK. Let's call it the commercial variety of tube, then.

You have no knowledge that a waiver on any but the commercial variety of tube has been made, on any tube other than some possible testing samples; is that right?

Mr. LEE MORGAN. That is my understanding.

Mr. ROBACK. So that the effect of your waiver was to make it possible for this commercial variety to be delivered.

This might be common justice in that originally you specified that the tube was available from Cleveland Container, and you had no reason to lead anybody to believe that it was other than a commercial variety of tube.

Is that substantially correct?

Mr. LEE MORGAN. Yes.

Mr. HOLIFIELD. Was this tube an impregnated tube of the commercial variety or was it just the regular cardboard type of tube?

Mr. LEE MORGAN. Well, it is a paper tube, a Kraft paper tube, which is impregnated, in contrast——

Mr. HOLIFIELD. It is not impregnated with plastic by the Cleveland people; is it?

Mr. LEE MORGAN. If tubes are procured from the Cleveland people, they do the impregnation.

Mr. HOLIFIELD. It was my understanding on the Century Industries contract that the contractor dipped these tubes in plastic in his plant.

Mr. LEE MORGAN. Not this tube, Mr. Chairman. You are thinking of the Aero 6A tube, which was, as you know, a dipped tube in the contractor's plant. The launcher manufacturer's plant.

Mr. ROBACK. Now, the Navy decided, in effect, that that dipping process that the chairman referred to on the earlier launcher was not adequate, so you went to a phenolic impregnated tube.

You decided, by changing the developer's specifications, that that tube was available at Cleveland. But that was a phenolic-impregnated tube, rather than a raw tube dipped by the manufacturer, as was the case on the earlier contract.

Mr. LEE MORGAN. That is right.

Mr. HOLIFIELD. And this tube did not withstand the moisture absorption which the previous tube withstood?

Mr. LEE MORGAN. We didn't specify what water absorption the 6A tube——

Are you referring to the 6A tube now?

Mr. HOLIFIELD. Well, I'm referring to the latter tube, as compared to the 6A tube.

Mr. LEE MORGAN. We didn't specify what moisture content the 6A tube could pick up. These are additional requirements for the tube over and above those in the 6A launcher.

Mr. ROBACK. Refining the specifications?

Mr. LEE MORGAN. It is much more rigorous, because we have 19 rockets that have to withstand this blast, rather than 7.

Mr. HOLIFIELD. Are those two specifications the only ones which have been waived?

Mr. LEE MORGAN. No, sir. The waiver I have just related applied to the 150 preproduction sample launchers.

Mr. ROBACK. You mean not to all the tubes?

Mr. LEE MORGAN. No, sir.

Mr. ROBACK. Are you talking about water absorption or compressive strength?

Mr. LEE MORGAN. The only waivers I have discussed so far are moisture and compressive strength.

These waivers applied to the 150 preproduction samples all the way through lot 75 of the production run.

Mr. ROBACK. They didn't go beyond that?

Mr. LEE MORGAN. In lot 76, the Be Ge Co., which has been experimenting with various other tubes in an effort to secure a cheaper tube and a tube more readily available at the higher production rates we desired, was given authority to manufacture 24 launchers containing a Globe Container Co. tube.

They requested a waiver for these 24 launchers to permit 30-percent acetone extraction and a 50-percent moisture absorption.

Mr. ROBACK. Fifty percent?

Mr. LEE MORGAN. Fifty percent.

Mr. ROBACK. They are going to get bogged down, aren't they?

Mr. LEE MORGAN. Oh, no. On the contrary, they will not get bogged down.

They requested the 30 percent, which is considerably in excess of the actual test results for these 24, only because they were exceeding slightly the 7½-percent permitted.

Actually, the figures were 7.74 to 12.13.

Now, they wanted a good safe margin for the evaluation of these 24 launchers.

Mr. ROBACK. You mean they wanted an absorption rate about 5 to 7 times that required or specified?

Mr. LEE MORGAN. No, that was acetone extraction, Mr. Roback. I haven't discussed moisture absorption.

Mr. ROBACK. Excuse me. It is hard for us laymen to follow these technical terms.

Mr. LEE MORGAN. The 30 percent is the waiver applying to paragraph 33421, acetone extraction.

The basic required 7½ percent; we granted 30 percent for this limited number of launchers, because the actual test figures showed that they were exceeding the 7½ percent by a slight amount.

Mr. ROBACK. Why did you grant up to 30 percent if it wasn't necessary?

Mr. LEE MORGAN. It wasn't necessary, and we didn't really worry about it, because they were only for the evaluation of a limited number of launchers in an effort to achieve high production.

Mr. ROBACK. To keep this record clear, at this point, that was lot 76?

Mr. LEE MORGAN. Through lot 75 we proceeded with the original waiver and were——

Mr. ROBACK (interposing). We understand that, but——

Mr. HOLIFIELD (interposing). Wait a minute. Let's get the answer to that first question.

Starting with lot 75, and going how far?

Mr. LEE MORGAN. In lot 76 there were 24 launchers, containing tubes manufactured by the Globe Container Co.

Mr. ROBACK. What I wanted to find out, Mr. Morgan, was whether, before you digress on that point, in effect the waivers covered all the tubes from the Cleveland Container Co. used by the contractor.

Is that the situation?

Mr. LEE MORGAN. This waiver that I am just discussing now applies only to 24 launchers.

Mr. ROBACK. I know, but I am referring to the waivers on compressive strength and water absorption which applied to Cleveland Container.

Did they cover every tube supplied by Cleveland Container Co.?

Mr. LEE MORGAN. Yes, they did.

Mr. ROBACK. So those waivers—strike that.

At the time you apeared before, at the last hearing, you said that you were rewriting the specification on compressive strength. You didn't rewrite the specification, because that still stands. You waived the specifications for the Cleveland Container tube.

Mr. LEE MORGAN. Yes; we granted a waiver.

Mr. EARL MORGAN. Was a change made in specification Mil–R–19168, as stated by Admiral Russell in his letter of December 19, 1956?

Mr. LEE MORGAN. Was it——

Mr. EARL MORGAN. Was the change in specification made?

I'll read you what he said in his letter:

A change in the specification MIL–R–19168 was made after it was established that its requirements as to compressive strength and water absorption were in

excess of the physical qualities of the tubes used successfully in the development of this equipment.

Mr. LEE MORGAN. The answer to your question is "Yes."

Mr. EARL MORGAN. The change was made in that specification, which was different from the waiver that Mr. Roback has been discussing; is that correct?

Mr. LEE MORGAN. No; it is the same waiver.

Mr. ROBACK. In other words, you didn't rewrite the specifications. You waived them. Waiver means waiver. You didn't rewrite the specification, although you led us to believe at the last hearing that this specification was going to be changed.

Mr. LEE MORGAN. I just said the specification was changed. I answered "Yes" to Mr. Morgan's question.

Mr. ROBACK. We asked at the time if you were talking about a waiver, and you said "No, this is going to be revised."

That was not revised. We ought not to quarrel about "waiver" when, by "waiver" you mean you suspended the requirement for that particular group of tubes.

Mr. LEE MORGAN. We suspended it, and, as said in Admiral Murphy's comments, we did change the specification to cover the waiver.

Mr. ROBACK. We won't argue about the word "change."

Mr. HOLIFIELD. These are the only specifications that were waived in that lot up to that time?

Mr. LEE MORGAN. I'm afraid I haven't gotten past the 24 launchers manufactured by Globe.

Mr. HOLIFIELD. Continue, please.

Mr. LEE MORGAN. I believe we have covered the story on acetone extraction.

We permitted a maximum of 50 percent moisture absorption.

Mr. HOLIFIELD. You started out with 7½ percent, and you raised it to 30 percent, and now you are raising it to 50; is that right?

Mr. LEE MORGAN. No, sir.

Mr. HOLIFIELD. All right, explain what you mean.

Mr. LEE MORGAN. The basic specification says:

Water absorption, 15 to 18 percent.

We changed that to 25 percent, that waiver applying to all launchers containing Cleveland Container tubes through lot 75.

Commencing with lot 76, we permitted 50 percent moisture absorption for the 24 launchers containing Globe tubes.

Mr. HOLIFIELD. That is for the 24 tubes?

Mr. LEE MORGAN. The 24 launchers.

Mr. HOLIFIELD. In other words, the first group you changed from 15 to 18 percent to 25, and then for the 24 additonal tubes, you raised it to 50 percent?

Mr. LEE MORGAN. Correct.

This waiver was granted because the naval ordnance test station had conducted some additional special testing relating to the moisture-absorption effect on the tubes, and had discovered that up to 50 percent the strength of the tube—50 percent moisture absorption—the strength of the tube was not significantly reduced.

We could live with a maximum of 60 percent actual moisture content in the tube.

These launchers were tested and passed our requirements, which then permitted another tube to be available to the Be–Ge Co.

Mr. ROBACK. That waiver applied to all subsequent Globe tubes?

Mr. LEE MORGAN. Yes; that is correct.

Now, we do need to explain the way we interpret those figures in terms of the production requirements at Be–Ge.

We are still requiring 15 percent moisture—rather, acetone extraction—and 50 percent moisture absorption. However, it is a characteristic of this tube that curing will continue even after it has been removed from the heated curing oven. It is a function of time. The tube continues to cure naturally in the ambient conditions for a period of 30 to 90 days, at which time it is, for all intents and purposes, stable.

However, curing does continue indefinitely.

With Be–Ge at a high production rate turning out hundreds of thousands of tubes, it was impractical to require them to wait for this period of time before we checked the tubes for their physical properties.

Therefore, to permit the contractor to proceed in assembling tubes into launchers, as soon as we had processed the tubes, we permitted 15 percent acetone extraction and 65 percent moisture absorption, with the condition that these readings be average readings.

The readings will vary depending upon where you select your section of tube. Obviously, the center of the tube is not going to be cured as well as the ends will be cured, and what we are after is an average reading.

So we are, in effect, clarifying the figure of 50 percent for quality-control testing purposes by the inspector.

Mr. ROBACK. What does 65 percent add to the weight of the launcher?

Mr. LEE MORGAN. Relatively nothing.

Mr. ROBACK. It doesn't add any weight?

Mr. LEE MORGAN. I don't think you can measure it.

Mr. ROBACK. What does the water absorption do to the tube?

Mr. LEE MORGAN. The purpose of the figure of the moisture absorption maximum allowable is to prevent the tube from absorbing through ambient conditions such as the humidity conditions that we have in the tropical zones, absorbing so much moisture that the tube would become soggy, soft, and blow to pieces when you fired a rocket.

We determined that we could accept 50 percent after complete curing. Sixty-five percent reading within 48 hours of removal from the oven will provide a 50 percent actual moisture-absorption content in this time I have spoken of.

Mr. ROBACK. Well, since you have permitted the contractor to assemble launchers with green tubes—you might say—and you have tested them, they might start to curl up and shrivel after you put them in stores?

Mr. LEE MORGAN. No; quite the converse.

We are testing them under the worst conditions when we test them immediately. The more time that would transpire, Mr. Roback, the better the tube would be. We are testing them immediately.

Mr. ROBACK. They won't curl up at the edges, eh?

Mr. LEE MORGAN. No, sir; quite the opposite.

They tend not to curl up.

Mr. ROBACK. Wasn't this the practical situation, that Globe Container couldn't make a tube to the specifications, so you changed the specifications in order that they could meet it?

You met them halfway?

Mr. LEE MORGAN. We changed our specifications based on some considerable testing and the results of the tests made at NOTS.

Mr. HOLIFIELD. So the result is that, starting out with 7½-percent absorption for moisture, you have raised it now to 65 percent?

Mr. LEE MORGAN. No, sir; we continue to confuse the items we are discussing.

The moisture absorption is 15 to 18 basic specification requirement, immediately raised to 25, thence to 50.

Mr. HOLIFIELD. And now it is 65?

Mr. LEE MORGAN. We don't consider that we have waived the 50 percent. We consider that in testing it immediately after removal from the oven we have extrapolated the curve, so to speak. It is really equivalent to 50 percent if the reading is taken at the contractor's plant within 48 hours.

In the past, we were shipping the tubes east, which took time, and testing them on the east coast.

In that time, the moisture content was reduced to the allowable maximum.

Mr. HOLIFIELD. Then, help to clear my mind on this:

First, you testified that there was a 7½ percent required.

What was that 7½ percent?

Mr. LEE MORGAN. That is the acetone extraction.

Mr. HOLIFIELD. That is the acetone.

And you raised that to 30 percent?

Mr. LEE MORGAN. Yes, sir.

Mr. HOLIFIELD. Is that right?

Mr. LEE MORGAN. That is correct, for 24 launchers only.

Mr. ROBACK. You said you were applying those to all subsequent tubes.

Mr. LEE MORGAN. The 30 percent applied to the 24.

The 30-percent acetone extraction applied to the 24 launchers only. For the balance of the contract, it is 15 percent.

Mr. HOLIFIELD. All right.

Now, were there any more specifications waived?

Mr. LEE MORGAN. That completed the waivers on tubes.

Mr. ROBACK. By the way, on that tube, what was the dimensional problem? You had deviations on two dimensions.

Have those continued without becoming formal waivers?

Mr. LEE MORGAN. No. The dimensional problem with the tube was a question of inspection criteria.

The first tubes delivered for the 150 preproduction samples did not meet the basic draining requirements in some minor matters.

Mr. ROBACK. And certain subsequent batches were in the same position?

Mr. LEE MORGAN. No, sir; we have required the basic dimensions for subsequent launchers.

Mr. ROBACK. You testified before, and you probably will recall, that you issued dimensional waivers on some batches of tubes beyond the 150 preproduction samples.

Mr. LEE MORGAN. Not dimensionally. At least, I have a statement in the letter to the inspector that no deviations beyond BuAer drawing——

Mr. ROBACK (interposing). That was on the second batch of samples approved, probably, on the 8,000 plus.

Mr. LEE MORGAN. No, sir.

Mr. ROBACK. What was the date of that letter?

Mr. LEE MORGAN. This is October 29, 1956.

Mr. ROBACK. So far as you are now testifying, your understanding is that dimensional tolerances were waived only on the preproduction samples batch——

Mr. LEE MORGAN (interposing). That is correct.

Mr. ROBACK (continuing). And none thereafter.

Mr. LEE MORGAN. That is my understanding.

Mr. ROBACK. That is the way it stands, so if there are any deviations from tolerances, that would be a matter of the naval inspector at the contractor's plant or at the tube plant deciding to let the tubes go through; is that right?

Mr. LEE MORGAN. We made the statement in this letter that says no deviations are authorized for the production run beyond the first 150 preproduction samples.

Mr. ROBACK. That is a final statement.

Would you subsequently check and verify that for us?

Mr. LEE MORGAN. Yes; I will.

Mr. EARL MORGAN. Were you requested at any time to waive the dimensional specifications?

Mr. LEE MORGAN. I can only recall the initial request for the 150. Those were assembled by a selective method, and some of the tubes couldn't be used.

But to obtain evaluation of these launchers as soon as possible, the contractor assembled the launchers by selective methods. It meant he couldn't use all the tubes that were given to him. It did not impair launcher performance one iota.

Mr. EARL MORGAN. What was the date of the request by the contractor to substitute the 24 Be Ge tubes for lot 76? Approximately.

Mr. LEE MORGAN. Approximately August of 1957.

Mr. EARL MORGAN. Have any launchers been delivered since that time, made with Cleveland Container tubes?

Mr. LEE MORGAN. Yes; lot—the changeover—let's see. I would have to check those dates for you. I can't without searching through my files, which would take time, give it to you right now.

Mr. ROBACK. We don't want to overwhelm you, but would you look at page 582 of the hearing record volume?

There is a message from BuAer March 11, 1957, which apparently waives tolerances on the second batch of tubes.

I interpret that message to mean that you waived the tolerances on the second batch of Cleveland Container tubes after the 150 samples.

If that isn't the correct interpretation, what does it mean?

Mr. LEE MORGAN. This is March 1957?

Mr. ROBACK. Yes.

Mr. LEE MORGAN. Well, my memory on that is not too fresh. It appears we have, at the option of the contractor, based on performance allowed him to deviate. But it would be at his risk.

Mr. ROBACK. We understand it is at his risk. He always has to bear some kind of risk in producing to performance specifications. But the only point I was dwelling on was you testified that the only tolerance deviations allowed were for 150 preproduction samples.

That apparently is not the case. I don't want to belabor the point; I just want to get the story straight.

Mr. LEE MORGAN. There appeared to be a question of 8,700 tubes of Cleveland Container, and I don't recall the situation.

Mr. ROBACK. That was the second batch of tubes, for your information, and to refresh your memory. That was the second shipment.

Mr. LEE MORGAN. I see we do say "all subsequent tubes must meet drawing requirements."

I had forgotten that.

Mr. EARL MORGAN. What was the result of the testing of these 24 tubes in late August of 1957?

Mr. LEE MORGAN. We accepted the launchers with these tubes in them.

Mr. EARL MORGAN. And it took you until when before you started receiving production quantities with those tubes?

Mr. LEE MORGAN. I believe, January of 1958, commencing with lot 76.

Mr. EARL MORGAN. Well, lot 76 wasn't delivered until January 1958?

Mr. LEE MORGAN. I believe that is—do you have the schedule, Lyle, of delivery?

Mr. BERCIER. January 29.

Mr. LEE MORGAN. Yes, the end of January.

Mr. EARL MORGAN. You stated earlier that subsequent to that date, additional lots were received, made with Cleveland Container tubes.

Is that correct?

Mr. LEE MORGAN. All lots subsequent to 76 are with the Be-Ge Globe tube.

Prior to that, the Cleveland tube.

Mr. EARL MORGAN. Then your earlier statement was incorrect: that after lot 75, you did receive some additional lots with Cleveland Container tubes?

Mr. LEE MORGAN. That would be incorrect, yes, if I said that.

Mr. EARL MORGAN. You referred to additional special testing being performed by Naval Ordnance Test Station.

To what were you referring? Were you referring to the tube testing program that has been going on out there for several years?

Mr. LEE MORGAN. Yes.

Mr. ROBACK. What funds are these tubes being tested from? Are they NOTS funds?

Mr. LEE MORGAN. No, the Be Ge Co., I believe, supplied funds for testing of tubes that they submitted for evaluation.

Mr. ROBACK. Did they supply the funds for the testing—for the firing-range time and for the rockets?

Mr. LEE MORGAN. No. I believe I sent you a communication on exactly that subject. I would like to addess myself to that. I don't remember those details.

Mr. ROBACK. Let me state the problem clearly.

The communication received by the committee concerned the learning samples. They were samples submitted by the contractor before the 150 preproduction samples.

Do you recall that?

Mr. LEE MORGAN. Yes.

Mr. ROBACK. The Government tested that at Government expense as far as range time and rockets were concerned.

Right?

Mr. LEE MORGAN. Yes.

Mr. ROBACK. That is the communication that was received.

The question is, who paid for the testing of Globe and other tubes?

Mr. LEE MORGAN. I thought we had given you an additional statement covering that.

Mr. ROBACK. You have not done that, as far as I know.

Mr. LEE MORGAN. You have no record of that?

Mr. Evans, I believe, can give us information on that.

Mr. EVANS. Some of the tests were paid for by special deposit by the Be Ge Co. to the commanding officer, Naval Ordnance Test Station.

However, in the tests Mr. Morgan is referring to, and our research on the effect of the additional water absorption on tubes, they were done in our laboratory on rocket launcher development funds.

Mr. ROBACK. What did Be Ge pay for in the tube-testing program? They paid for the tubes?

Mr. EVANS. They paid for range time for single firing some of their tubes, and also some of their launchers that they made, using their tubes.

Mr. ROBACK. And you supplemented their program by expending some of NOTS funds for additional testing and development work.

Is that right?

Mr. EVANS. Are you directing that question to me or to Mr. Morgan?

Mr. ROBACK. Yes, to you, Mr. Evans.

Mr. EVANS. We didn't supplement them. We wanted to find out for our own satisfaction before granting a waiver what effect additional moisture absorption would have on the tube.

Mr. ROBACK. So, in effect, you were testing, when you come right down to it, you were testing additional samples, because a new tube meant a new launcher as far as this particular problem is concerned. You were testing additional learning samples.

In effect, isn't that what you did?

Mr. LEE MORGAN. Well, certainly we had a program underway to investigate the tube problems still further.

Mr. ROBACK. You see, this is the kind of program that should have been underway before you let the advertised contract. Since you let the contract, and the supplier couldn't get the tubes, you helped him find a new source of tubes.

Now, there is the question of whether the Government is permitted to spend funds in that manner.

Mr. LEE MORGAN. The Cleveland tube met the requirements of the specification.

Mr. ROBACK. After you made certain waivers.

So did Be Ge after you made certain waivers.

Any tube will meet specifications if you make certain waivers, and, as a matter of fact, Cleveland Container made a tube which they said, if somebody wanted to pay $2 or $3 for it, could be had, but the contractor wasn't going to pay $2 or $3.

So, he looked for a cheaper source, as you testified yourself.

You helped him find a cheaper source. You helped him keep his head above water on the Government contract.

The legal question is, Are you permitted to spend Government funds on an advertised contract to do that?

You don't need to answer that question; I merely raise it.

Mr. LEE MORGAN. I can't answer that question.

We let certain contracts, working toward the development——

Mr. HOLIFIELD. This was a production contract; it wasn't a development contract.

There had already been a tube that had been developed, and a launcher that had been developed, and had been accepted on a production basis, which was satisfactory, and so the contract, when it was let, was let on a competitive bid basis, and the production contract is not a research and development contract.

Mr. LEE MORGAN. And we had a tube available which met the requirements of the specification.

The contractor could have continued to employ a tube that met the specification. It cost him more than he wanted to pay, so he went into a program of trying to secure a tube at a cheaper source. We didn't want to bankrupt him.

Mr. HOLIFIELD. Wait a minute, now.

Now we find you using a new excuse for changing your specifications, because you didn't want to "bankrupt" a contractor who had bid on a competitive bid and had received a contract on the basis of the specifications offered in the invitation to bid.

So now you find that the specifications are a little bit too stiff for him, and you proceed to allocate moneys for research and development and, on the completion of that, why, you waived the original specifications, which put the contractor, the successful contractor, in the position of now being able to complete a contract with liberalized specifications.

But, in effect, it discriminates against those who bid on the stiffer recommendations prior to that.

Mr. LEE MORGAN. We have asked him for a proposal on reduction of prices in the contract for waiving the specifications.

Mr. HOLIFIELD. Yes, but over 2 years have passed by, and, according to the admiral's statement—

> Both the delivery schedules and the engineering changes, with their possible impact on the contractor's cost and price, has been the subject of recent meetings between the Navy and representatives of the Be-Ge Corp. While the meetings have been productive, no price or delivery changes have been authorized.

Now, this brings to a head the question I was proposing to ask. The admiral says that the meetings have been productive. I don't know how productive they have been.

What do you mean by that, Admiral, that the "meetings have been productive but no price or delivery changes have been authorized?"

Admiral HINES. There have been quite a large number of changes, Mr. Chairman, as has been brought out earlier.

By "productive," I mean I think we have resolved many of the questions involved in those changes, as to effect on price incident to those changes.

We have not resolved them all, and, as of this moment, there has been no amendment to the contract to change either the schedule or the price.

Mr. HOLIFIELD. That is possibly true, but, now, I ask you what series of changes has the contractor asked in regard to raising his price from the $90.51 award price?

Do you have a record of requests from the contractor for price raises?

Admiral HINES. I think Lieutenant Commander Spargo, the contracting officer, could best answer that.

Mr. HOLIFIELD. Well, all right.

Admiral HINES. Mr. Chairman, before that, could I try to clarify our general thinking in this area of changes in these specifications?

Mr. HOLIFIELD. Yes.

Admiral HINES. As I see it, during the development program, a good many different kinds of tubes were tried.

One of the kinds of tubes, in fact, the most satisfactory one, we, let's say, were able to procure in the development program on this launcher was this Cleveland tube. That is why we mentioned it in the specifications. This is one fellow that can make a tube that in our experience works.

Now, in trying to spell out the qualities of that tube in detail, I think we made, frankly, an error. We said, for example, that the compressive strength should be 7,700 pounds per square inch, or something of that sort. It developed that this figure was attainable with the small diameter tube, but not for the kind we were talking about.

Now, we certainly recognized in the beginning that there were certainly other tubes which could possibly meet this requirement. That is why we put in the statement that this is not intended to be restrictive, that there are all kinds of tubes and all sorts of processes that might be used, and I think the contractor made quite an effort, and we contributed in some measure, in his finding a new tube. This is a continuing program, that the laboratories at Inyokern tried to develop better pieces of equipment of this sort.

I hope that that clarifies in some measure the business of specifying——

Mr. HOLIFIELD. It clarifies your procedure, and I'm all for development and research, and I frequently vote large sums of money. In fact, I'm going on the floor this afternoon to plead for about $39 million in research and development.

Admiral HINES. I wish you success.

Mr. HOLIFIELD. But the pertinency of my remarks was to the effect that using research and development moneys in a production contract which has been awarded on a competitive bid—going, in other words, to bail out a contractor on research and development funds—from the standpoint of the Government obtaining its product, this may be necessary, and certainly the contractor would be very happy to receive this largesse, but it still does not provide an answer concerning original position in which you put the other bidders who bid on a competitive basis and who are willing to meet the specifications without any com-

mitment on the part of the Government for additional research and development.

Admiral HINES. I think there is another important point, sir, and that is—I believe it has been brought out earlier—that the capacity of the Cleveland concern in manufacturing these tubes was only about 50,000 a month, or something of that sort. Frankly, this is of some concern to us. The only source we know of that makes these tubes is not adequate to meet the higher requirements. So that Inyokern has been concerned with developing other sources, possible mobilization of other resources for these tubes. So I don't think it is fair to say we went in and tried to bail this fellow out who was in trouble. I don't think that we have done any more for him then we would have done for any other contractor.

Mr. HOLIFIELD. I'm not saying you did, but you knew the production of the Cleveland people when you let the contract. You should have known it, because they have furnished these tubes before.

Admiral HINES. I'm not sure we knew his capacity at that time, sir.

Mr. ROBACK. Was it your responsibility to know? Admiral Murphy said that it was the business of the successful bidder to start worrying about that. But the successful bidder didn't ascertain supply, so the Navy comes in later and helps to develop other sources. The question is, where does the Navy responsibility begin and where does it end? These contracts have complete intermingling and confusion of responsibilities. In the end, your negotiations may be productive, but they are prolonged, because you don't know who is responsible for what.

Now, if you made a determination that the supplier was responsible—that the contractor was responsible—for getting these tubes, he should have gotten them. You have procedures to deal with contractors who don't get them.

Admiral HINES. I certainly concede that there are areas of judgment involved here. Our ultimate objective, of course, was to get a rocket launcher that worked and get it in inventory. I don't think you would want us to let an advertised procurement and let the fellow flounder completely, without any offer of aid.

Mr. ROBACK. Admiral, I don't want to go into corollary issues, but there was a contract on another item that this committee looked at, in which, after the preproduction sample could not be satisfactorily produced within 4 weeks after contract date, the contractor's head was chopped off and the extra costs of alternate procurement were assessed against him. He went bankrupt.

Mr. LEE MORGAN. Is that the first production release you are speaking of?

Mr. ROBACK. No.

Mr. LEE MORGAN. This was a first-production release, and there is a lot to learn, as there is on every production release.

Mr. ROBACK. When you make a decision to advertise procurement, either it is fit for production or it is not.

Mr. LEE MORGAN. We felt that Cleveland Container with their capacity, could easily expand to provide their necessary number of tubes. We had informal statements to that effect. We don't know how to get a positive commitment from the supplier.

Mr. ROBACK. Be Ge kept you constantly advised from the very beginning that Cleveland Container could never supply you with the number of tubes required on this contract. You stated at the last hearing that you knew of no source, including Cleveland, that could supply enough tubes to meet the delivery schedule on this contract.

Mr. LEE MORGAN. Before we released to production, we thought that Cleveland Container Co. could meet the requirements, and we thought many others could.

Mr. ROBACK. You were wrong. It is as simple as that. Your judgment was wrong, and, in retrospect, it was quite wrong.

Mr. LEE MORGAN. I'm not so sure that if Be Ge had placed their entire order with Cleveland, whether Cleveland couldn't have provided the necessary number of tubes. They could have expanded their facility.

Mr. ROBACK. You mean that Be Ge was tardy in not putting in enough orders with Cleveland?

Mr. LEE MORGAN. I don't know. I'm just conjecturing that if Cleveland had expanded their facility, they could probably have supplied the quantity required.

Mr. ROBACK. Why did you go into the development program? Why didn't you insist that the contractor get the tubes?

Mr. LEE MORGAN. We only said on the drawing Cleveland or equal. We can't make the contractor go to Cleveland.

Mr. ROBACK. You couldn't make him go there, but you apparently took the responsibility of helping him go elsewhere.

Mr. LEE MORGAN. In the normal course of tube development——

Mr. ROBACK. There is no normal course of tube development in this program, and you know that. What is the normal course of tube development in this program? It has been abnormal from the beginning.

Mr. LEE MORGAN. We are still developing tubes, Mr. Roback. We have other tubes under development. We expect to know lots more things in the future.

Mr. ROBACK. You were not only wrong in making a decision about tube supply, but the question arises whether you had a development contract that was adequate for production. Certain problems are expected, but possibly you signed off the development on that prematurely.

Mr. LEE MORGAN. We don't think we did.

Mr. ROBACK. Of course, you want to defend your position. That is understandable. But how many engineering changes have been accepted formally by the Government on this contract?

Mr. LEE MORGAN. A total of 156 have been prepared by the contractor.

Mr. ROBACK. How many have been formally accepted and reflected in modifications of the contract?

Mr. LEE MORGAN. Sixteen were either not submitted or were rejected, and we have made 140 a part of the contract.

Mr. ROBACK. You have insisted from the very beginning that these are minor discrepancies in the drawings, or other trivia which are to be expected in the normal course of things. Is that the case?

Mr. LEE MORGAN. I would be happy to go into these changes in detail. I don't insist that all of them are trivia. I don't think I ever did. The majority of them are.

Mr. ROBACK. Naturally the majority of them are, but it doesn't take many important ones to make the difference between whether the item can be produced or not. Some of them had to do with the detent; some of them had to do with the fairings; some of them had to do with bulkhead failures.

Mr. HOLIFIELD. All right, now, we have the testimony that 156 changes have been asked for by the contractor, and 140 granted. Now, we'll get to Commander Spargo, and will you please give us the total price changes, the net result of the total price changes requested, whether it be finally in addition to, or a lessening of, the contract price. How much has been asked, and what is the net result?

Lieutenant Commander SPARGO. Mr. Chairman, the results of our meeting showed a net change of $1.80 per launcher.

Mr. ROBACK. Upward or downward?

Lieutenant Commander SPARGO. Upward.

Mr. EARL MORGAN. And that is approved?

Lieutenant Commander SPARGO. No, sir; I would like to further clarify that.

These are the results of meetings which were held. They are tentatively approved. The contractor has not accepted these under the terms of the contract as yet.

Mr. EARL MORGAN. You have no other requests pending for further increases in the unit price?

Lieutenant Commander SPARGO. From the contractor?

Mr. EARL MORGAN. From the contractor.

Lieutenant Commander SPARGO. We do, sir.

Mr. EARL MORGAN. That is what the chairman is trying to find out, what the contractor has requested in the way of price changes.

Mr. HOLIFIELD. Just a minute, I can't understand your answer now to my question. I first started out by saying the contractor had asked for 156 changes, and that the Navy has granted 140 of those changes. Then I asked you for the net change in the contract price, whether it be upward or downward. You answer was that it was $1.80 upward, which would bring it to $92.32.

You stated while this had not been granted, it had been tentatively approved by the Navy. Now, in response to Mr. Morgan's question, I find that I do not have what I asked for. Will you please now restate your answer so that it will be more responsive to my question?

Lieutenant Commander SPARGO. Well, I was trying to state, Mr. Chairman, the Navy's position insofar as changes and as a result of these negotiations, what dollar amount we had agreed upon with the contractor.

Mr. HOLIFIELD. I understand.

Lieutenant Commander SPARGO. Now, if you are asking his latest total request——

Mr. HOLIFIELD. Yes, the request. I understand there have been some reductions on some points and some upward revisions. Now, if that be true, what has the contractor asked for in price changes, and what would the total result be if they were granted?

Lieutenant Commander SPARGO. In order to do that properly, Mr. Chairman, I think we'll have to take each of the engineering changes and go through them to illustrate specifically what increases were requested or what decreases were considered. Is that the desire of the committee?

Mr. HOLIFIELD. Well, certainly it is not necessary to go through it at this time before the committee, but——

Lieutenant Commander SPARGO. I have a——

Mr. HOLIFIELD. Do you have a total so that you can give me a total answer to it, and these other detailed changes can be supplied for the record.

Lieutenant Commander SPARGO. No, sir; I don't think I can give you a total statement, because I gave to you what had been agreed upon.

Now, there are additional areas where the contractor and the Navy have not reached agreement.

Mr. ROBACK. Commander Spargo, do these price changes go to items which were requested—were these changes requested before or after approval of the preproduction samples?

Lieutenant Commander SPARGO. They are all-inclusive, sir. They are all changes to date.

Mr. ROBACK. What was the meaning of the protective clause in the contract, and I call your attention to page 551 of the hearing, in which a reply was submitted by the Navy to certain questions? It states that the purpose of this protective clause, that production should not start until samples had been approved, meant that in the event of changes or terminations prior to approval, the Government will not be liable for production or change costs with respect to any launchers in excess of the 150 preproduction samples. What does that mean? Does that mean what it says?

Lieutenant Commander SPARGO. It means, as I listen to you, sir, that the Government has a right to terminate the contract.

Mr. ROBACK. Well, it says there that this clause was put in so that the Government is not liable for any change costs above 150 preproduction samples. This first article approval clause was a protective clause. It was emphasized by the witnesses from the Navy that this clause was to protect the Government. What is it protecting the Government from?

Admiral HINES. To me, it means that—let us say during the course of building the 150 preproduction samples he chose at his own risk to build several hundred more, thinking these were going to get through. Then a number of changes occur in that 150. We are not going to pay him for the changes he has to make.

Mr. ROBACK. Then I ask a question of Commander Spargo; how many of these changes originated in the testing of the 150 preproduction samples—a number of them did?

Lieutenant Commander SPARGO. That is right.

Mr. ROBACK. And, therefore, under your own statement here, you are not liable for any costs incurred by those changes? And, in fact, you should not be liable for any costs incurred by any changes, because you are supposed to have approved these articles before you let the fellow go ahead.

Lieutenant Commander SPARGO. I don't follow the line of reasoning.

Mr. ROBACK. Look at this answer by the Navy and tell me what it means—the second paragraph on page 551—the sentence in paragraph (*a*) which reads:

Production of the items to be furnished under the contract shall not commence—

et cetera—

means that in the event of changes or termination prior to approval, the Government will not be liable for production or change costs with respect to any launchers in excess of 150 preproduction samples.

Now, I just read plain English. It says if in the testing of these samples changes occur, the Government is not liable for the costs.

Mr. LEE MORGAN. If there had been a serious error in the drawing which could have involved substantial sums of money, the contractor could build 150 launchers with that error in there. If he had proceeded with the balance of the order before we had given him the clearance to go ahead, and that substantial error—resulted in a substantial cost against the contract, the Navy would not have been responsible. The contractor could not commit 44,000 launchers or the equipment required to make 44,000 launchers with that error in them, because we would never have approved it. So it did protect the Government. We actually completed, or processed and agreed upon 128 changes by the time the contractor was authorized to proceed with the major, or the balance of the production order. We cleared up the discrepancies, the errors, the desirable changes, the improvements and what-have-you, almost immediately. There were 28 changes that we had to process, since we had given him the full go-ahead.

Mr. ROBACK. Now, he is coming in and asking for some price changes based upon those changes, is he not?

Mr. LEE MORGAN. He is. And we are discussing the effect of those changes, both in his favor and in the Navy's favor. We have introduced changes ourselves which reduced the price of the contract. We have granted changes in production methods. Where we have waived Government's rights, we have requested consideration. And that is what we are discussing now.

Ninety-two of these one hundred and forty changes have no effect on the terms of the contract.

Mr. HOLIFIELD. You mean they have no price changes?

Mr. LEE MORGAN. They do not affect it in terms of a price change, no, sir. Twenty engineering change orders do have an effect on the contract price toward increasing it.

Mr. HOLIFIELD. And are those 20 changes which have been requested?

Mr. LEE MORGAN. Changes which have been agreed to.

Mr. EARL MORGAN. Increase in changes, but not in price—agreed to the change, but not to the price differential; is that correct?

Mr. LEE MORGAN. These we have agreed to.

Mr. EARL MORGAN. Pricewise as well?

Mr. LEE MORGAN. Tentative agreement pricewise.

Mr. HOLIFIELD. And that is your $1.80?

Mr. LEE MORGAN. These are the increased items. Two we have which should reduce contract price, that we have agreed to.

Mr. HOLIFIELD. So——

Mr. LEE MORGAN. Twenty-six items the contractor and the Government are not agreed upon. The value of the—tentative value, tentative agreement—understand, this is nothing, no contractual agreement has been reached, but the tentative agreement so far on the increases is $146,562.65.

Mr. HOLIFIELD. $146——

Mr. LEE MORGAN. $146,562.65.

Mr. HOLIFIELD. That is up.

Mr. LEE MORGAN. Upward.

Mr. HOLIFIELD. On how many launchers?

Mr. LEE MORGAN. The total contract. The items where there has been tentative agreement to reduce the contract price add up to $66,644,30. A net increase of $79,918.35.

Mr. EARL MORGAN. How about the area still in dispute?

Mr. HOLIFIELD. The 26. Now, as I understand, there are still 26 changes which you have not agreed about.

Mr. LEE MORGAN. That is correct.

Mr. HOLIFIELD. What is involved in those changes, as far as the contractor is concerned—how much does he want?

Mr. LEE MORGAN. Are we allowed to make that estimate?

Admiral HINES. I do not think there is any harm in saying what he wants. I would not like to disclose our position.

Mr. HOLIFIELD. Without any obligation upon the Navy to grant it. We are exploring the contract, and asking the question does not imply that the committee suggests that you either accept or reject any of these changes at this time.

Mr. LEE MORGAN. Nor are we compromising our negotiating position.

Mr. HOLIFIELD. That is correct. Nor does the committee consider the Navy is compromising its position. We feel it would be wrong if they did compromise their position.

Mr. LEE MORGAN. He is asking for further increases in the amount of $258,743. I have rounded these figures off, because they are not in agreement. We are asking for a reduction of $183,867. The net increase involved in the dispute items is $74,876. Adding to that the tentative agreed to net increase of $79,918.35, it gives us a total possible net increase of $154,794.

Mr. HOLIFIELD. How much was the original contract for?

Mr. LEE MORGAN. The unit price was $90.15.

Mr. ROBACK. Mr. Chairman, could we have a little clarification of Admiral Hines' statement that the June 1957 completion delivery date still holds? I understood in the second amendment of this contract the final delivery date was pushed over to August of 1957.

Do you have any recollection on that?

Admiral HINES. I had an impression there was an amendment which pushed up the completion date as stated in the contract. But I have been assured no later than this morning that as far as the contract stands now, it still involves completion of delivery as of last June.

Mr. ROBACK. Well, what was the meaning of amendment No. 2? Was that rescinded?

Mr. LEE MORGAN. Revision No. 2?

Mr. ROBACK. Revision No. 2 in the contract.

Mr. LEE MORGAN. That, I believe, was amended because the time permitted the contractors to bid on the contract was extended by some

time, and we merely pushed all deliveries forward to compensate for the additional time granted.

Is that correct?

Mr. ROBACK. Let us be accurate about this, Mr. Morgan.

Mr. LEE MORGAN. I am attempting to.

Mr. ROBACK. We are not talking now about an extension of the bid opening date. We are not talking about that.

Mr. LEE MORGAN. Well, it is a result of the bid opening date, is what I was attempting to explain. Revision 2 does just that. Instead of August, we moved it ahead to October.

Admiral HINES. Yes; but it also moved the completion up to August.

Mr. ROBACK. Doesn't it say in revision No. 2:

Delete August 1956 through June 1957 and insert October 1956 through August 1957.

Admiral HINES. That is right.

Mr. ROBACK. Do you want to revise your statement to reflect this change, or has this been rescinded?

Mr. LEE MORGAN. Revision 2 is still outstanding.

Mr. ROBACK. All right. If I can read English, then, you have pushed the delivery date to August 1957, so the June 1957 date is not extant at the moment.

Admiral HINES. I would like to correct my testimony on the basis of this. I think everything indicates this is in effect.

Mr. ROBACK. All right. Now, isn't it a fact that this delivery date was extended not because you had any delay in your bid opening but you had conflicting provisions in the contract? You had a provision in the contract that said that preproduction samples shall be submitted within 4 months after the date of the contract. That is one provision. Another provision specified that the first deliveries should begin in October, or in August, I believe. So you have conflicting provisions. And this amendment was really put in there to reconcile those, was it not?

Admiral HINES. I think so.

Mr. ROBACK. Let me ask you this: What was the date for submission of preproduction samples in the contract? You can read it out of the contract.

Lieutenant Commander SPARGO (reading):

Such samples shall be submitted within 4 months after the date of the contract.

Mr. ROBACK. All right. When was the first delivery date specified in the contract for production quantities?

Lieutenant Commander SPARGO. The first delivery date for the 150 was August of 1956.

Mr. ROBACK. All right. When was the contract entered into?

Lieutenant Commander SPARGO. The contract is dated June 7.

Mr. HOLIFIELD. What year?

Lieutenant Commander SPARGO. 1956.

Mr. ROBACK. Don't you see a conflict in those two provisions?

Lieutenant Commander SPARGO. Yes, sir.

Mr. ROBACK. So, isn't it permissible to construe that by extending the date you are trying to adjust that conflict in the contract?

Lieutenant Commander SPARGO. I think that is correct, sir.

Mr. ROBACK. Now, has there been any further decision, any further petition on the part of the contractor, or any modification on the part of the Navy, for the final delivery dates on the contract?

Mr. LEE MORGAN. The contractor has delivered a proposed new delivery schedule.

Mr. ROBACK. Are you in a position to state the final termination date on that?

Mr. LEE MORGAN. Yes.

Mr. ROBACK. What is that?

Mr. LEE MORGAN. I can quote him. January 1959.

Mr. ROBACK. So that your statement, Admiral Hines, about the expected completion of deliveries was tuned to the proposal of the contractor.

Now, is that a matter now of negotiation as to whether you accept that or not?

Lieutenant Commander SPARGO. Yes, it is.

Mr. ROBACK. Why do you have to accept it? I mean why do you have to make a decision about it?

Lieutenant Commander SPARGO. We would like to find out if the contractor can adhere to that through actual production increased experience.

Mr. ROBACK. But that also will have the effect, will it not, of waiving any privilege that the Government might have to default the contract? If you extend the delivery date, you can't argue with him.

Admiral HINES. I think that is a legal question, but I believe it is a fair inference, that this would be the case—that we would waive any right certainly of——

Mr. ROBACK. So you would prefer to waive your legal privilege and at least have some kind of a date that you can now hold him against. Is that the idea?

Admiral HINES. Offhand I would say so. And I believe we recover our privilege of default on the new schedule, if he could not meet that.

Mr. HOLIFIELD. You testified 13,391 launchers have been delivered up to July 11. How many remain to be delivered?

Admiral HINES. 30,872, by my arithmetic, sir.

Mr. HOLIFIELD. Now, that remains of the revised contract, for the total amount yet to be delivered?

Admiral HINES. Yes, sir.

Mr. HOLIFIELD. So from June 1956, when they signed the contract to July 11, 1958, a period of 2 years, they have delivered 13,391 launchers. They now request 6 months additional from the present date—they request January of 1959 for the delivery of the remaining 30,872 launchers. That is a period from July 11, assuming the end of January, of about 6½ months.

Now, what is their monthly production rate at this time?

Admiral HINES. Mr. Morgan, can you answer that?

Mr. LEE MORGAN. Well, they are on 2 weeks' vacation at the moment. I can only give you——

Mr. HOLIFIELD. They are on 2 weeks' vacation?

Mr. ROBACK. You mean a shutdown?

Mr. LEE MORGAN. Yes, sir. In June they delivered 786. July—a forecast is 844 for July.

Mr. ROBACK. Those forecasts are relatively useless in the light of the chronology of this thing, Mr. Morgan.

Mr. HOLIFIELD. Well, let us take the May delivery. What did you get in May?

Mr. LEE MORGAN. 533.

Mr. HOLIFIELD. And what did you get in the previous month?

Mr. LEE MORGAN. 267.

Mr. HOLIFIELD. And in the month before that?

Mr. LEE MORGAN. I am sorry. That is the wrong year.

Mr. HOLIFIELD. Well, let us take 1958 and start in with January.

Mr. LEE MORGAN. Yes, sir. In January, 864; February, 1,045; 1,155; 1,425; 1,418; 2,710; June; 2,490, July.

Mr. HOLIFIELD. What is the forecast for July?

Mr. LEE MORGAN. 2,490.

Mr. ROBACK. In other words, they will have to double their production rate, at least.

Mr. HOLIFIELD. They will have to average 5,000 a month if—for the rest of the period on up to January of 1959. They will have to average 5,000 a month, or double their production in order to make delivery.

Mr. LEE MORGAN. That is his forecast.

Mr. ROBACK. Do you have any information whether the tubes are available?

Mr. LEE MORGAN. Only his statement.

Mr. ROBACK. And he says that he expects that Globe will come up with the paper.

Mr. LEE MORGAN. Globe-Be-Ge. He is participating in the production of the new tube.

Mr. ROBACK. Is Be Ge producing its own tubes?

Mr. LEE MORGAN. They are performing the curing processes.

Mr. ROBACK. Kind of a joint proposition?

Mr. LEE MORGAN. Yes, sir.

Mr. ROBACK. In the meantime, the Navy is faced with the problem of not getting these launchers over a protracted period—this procurement started in February 1956—and the tactical requirements inevitably are going to change. Now, as you said, they are changing. They have changed. You do not really have that urgency that you had before; is that correct?

Admiral HINES. That is correct.

Mr. ROBACK. Is the urgency a result of the failure of the contractor to deliver on time, or is it because of other conditions?

Admiral HINES. I think it is fair to say that there are several factors. One of them is the fewer number of airplanes operating than we anticipated. And perhaps a little bit lower tempo generally than these requirements are based on.

Mr. ROBACK. Do these launchers all fire the 2.75 folding fin rocket, as it is called, the Mighty Mouse? Is that the rocket that it fires?

Mr. LEE MORGAN. That is correct.

Mr. ROBACK. Are these rockets used for any other purpose than these launchers?

Mr. LEE MORGAN. Yes, sir.

Mr. ROBACK. What are they used for?

Mr. LEE MORGAN. They are used in other naval aircraft.

Mr. ROBACK. But they are used for rocket launchers.

Mr. LEE MORGAN. They are used in other launchers, and they are used in other aircraft, with different type of launchers.

Mr. ROBACK. In what types of aircraft are the Aero 7D launchers used?

Mr. LEE MORGAN. Fighter and attack aircraft.

Mr. ROBACK. What specifically? Do you know what models of aircraft?

Mr. LEE MORGAN. The F4D, the F3H, the F9F, the A4D, the AD.

Mr. ROBACK. Are there any Navy aircraft of the types that use rocket launchers that cannot use the 19-rounder?

Mr. LEE MORGAN. Yes.

Mr. ROBACK. Which ones are those?

Mr. LEE MORGAN. The F4H, the F8U3.

Mr. ROBACK. Why can't they use them—because the suspension systems are not geared to that?

Mr. LEE MORGAN. They are a higher performance aircraft, designed to use missiles.

Mr. ROBACK. So that if you loaded them with Aero 7D's and you zoomed off, maybe——

Mr. LEE MORGAN. They are not designed to carry them by intent, not any inadvertence.

Mr. ROBACK. There is no invidious comment here. We are exploring the issue.

Mr. LEE MORGAN. The issue is there is no issue. They are not designed to carry external rocket packages of this type. There are no provisions on this aircraft to permit the carrying of this launcher.

Mr. ROBACK. When the Air Force decided to produce its version of this rocket launcher, it decided that the Navy launcher had to be improved in certain respects. One of those was the fact that on high speed, high-performance Air Force aircraft, with these Aero 7D's, the nose fairings would crush in flight, and there were certain other troubles. Now, it was testified here at the last hearing that there is complete service compatibility. But, the question I ask is: Can the Navy, on its high-speed aircraft, or the Air Force on its 100 series aircraft, use the Aero 7D?

Mr. LEE MORGAN. Yes, I believe they can.

Mr. ROBACK. Well, you are contradicting yourself.

Mr. LEE MORGAN. I have not contradicted myself. I said I believe they can.

Mr. ROBACK. You just testified that there are certain Navy aircraft that cannot use the Aero 7D because they are too high speed.

Mr. LEE MORGAN. No, I did not.

Mr. ROBACK. Well, then, restate it so we can understand it.

Mr. LEE MORGAN. The aircraft that I mentioned as not being able to carry the Aero 7D cannot carry them because they are not equipped to carry any externally carried stores, either launchers, packages, bombs, et cetera.

Mr. ROBACK. Are there any Navy aircraft that cannot carry the Aero 7D because they fly too fast?

Mr. LEE MORGAN. Negative.

Mr. ROBACK. What about the Air Force? Can the Air Force load the Aero 7D?

Mr. LEE MORGAN. As far as I know, yes.

Mr. ROBACK. Well, has the Navy adjusted the specifications to conform with the Air Force revisions so that the nose fairings won't crush?

Let me restate that so you will know exactly what we are talking about. When the first models of the Aero 7D built by the developing company, Century Engineers, were tested by the Air Force, they found they had to revise the specification for the nose fairings because at high speeds they crushed in flight. Now, did the Navy, in turn, revise its specifications so the Aero 7D's can be used by the Air Force, if as it currently appears they are not getting any of their own?

Mr. LEE MORGAN. We did make a change in the proportion of wood pulp and paper pulp to be used in the fairings. And I believe our investigation indicated that the reason for apparent failure on Air Force aircraft was in the adequacy of the glue, application of the glue which holds the two sections of the fairing together. It was not a crushing problem but an inadequate manufacturing procedure by the supplier. And that is the best information we have been able to develop.

Mr. ROBACK. I don't want to get into a technical argument between your testing agency and the Air Force. They said the nose fairings crushed in flight. The only question I have is, and if you can't answer it so state, can the Aero 7D's be flown on the century series Air Force aircraft?

Mr. LEE MORGAN. I believe they can.

Mr. ROBACK. You believe they can, but you don't know. You are not producing launchers for Air Force aircraft.

Mr. LEE MORGAN. I am meeting a Navy requirement.

Mr. ROBACK. I am trying to find out what is the meaning of the statement that the Navy made here last time that there is complete service compatibility. That only went to the suspension system, didn't it, not to the quality of the launchers?

Mr. LEE MORGAN. So far as I am concerned, I believe our launcher as produced today will fly on the Air Force aircraft and perform satisfactorily.

Mr. ROBACK. The Air Force strengthened the sway bracing area. Did you strengthen the sway bracing area?

Mr. LEE MORGAN. The Air Force, as I understand it, had a nonstandard bomb rack that they wished to install this package on. On that same bomb rack was carried a gas tank, a very long affair that required extra heavy sway brace capability. And because they wanted to use this launcher on that special nonstandard bomb rack, they widened the hanger beam which provides the support for the sway braces to permit carriage on that particular bomb rack. We did not incorporate that in these launchers under contract. I believe, however, we have modified the drawings for future procurement so that any further launchers we manufacture will fit this particular installation.

Mr. ROBACK. In other words, the goal of interservice compatibility is still somewhat to be achieved.

Mr. LEE MORGAN. For special installations, yes.

Mr. HOLIFIELD. Is the Navy currently developing additional launchers for the 2.75-inch rocket?

Mr. LEE MORGAN. No.

Mr. HOLIFIELD. You have no development contract on that?

Mr. LEE MORGAN. No.

Mr. ROBACK. What about the 38 rounder? Do you have a 38-rounder development?

Mr. LEE MORGAN. No.

Mr. ROBACK. Does your present Aero 7–D provide for single pulse firing?

Mr. LEE MORGAN. No.

Mr. ROBACK. Do you have a half firing capability on these rockets?

Mr. LEE MORGAN. No.

Mr. ROBACK. Well, what is the single-pulse firing—when you shoot all the rockets out at one time? That is the kind of specification you have?

Mr. LEE MORGAN. That is called a ripple fire.

Mr. ROBACK. You have a ripple fire specification?

Mr. LEE MORGAN. The launcher fires all rockets with one firing pulse.

Mr. ROBACK. Has that ever been changed?

Mr. LEE MORGAN. No.

Mr. HOLIFIELD. Does the Navy consider the contractor to be delinquent, Admiral?

Admiral HINES. He is delinquent on the face of it, sir.

Mr. EARL MORGAN. Has he been so advised?

Admiral HINES. I would have to ask the contracting officer.

Lieutenant Commander SPARGO. He has been so advised by me during the negotiations.

Mr. EARL MORGAN. Under what dates?

Lieutenant Commander SPARGO. I don't recall the specific date. It was during the June 9 starting negotiations.

Mr. EARL MORGAN. On June 19, 1957, the inspector of naval material, San Francisco, submitted a letter to the Be Ge Manufacturing Co. which is contained on page 597 of our previous hearings. In this letter he notified the contractor that delivery of the item under contract has not been received in accordance with the contract delivery schedule. And then he requested the contractor to notify the contracting officer via the inspector in writing not later than May 29, 1957—

(1). the reason for such failure to deliver, including any excusable delay which may have been encountered by you within the meaning of the contracts default or excusable delay clauses and the nature and extent thereof, and, (2), anticipated date when delivery will be made.

What was the next course of action taken by the Navy on this matter?

Lieutenant Commander SPARGO. I don't know, without checking the files. I would have to find out if he replied, and our subsequent action.

Would you like me to do that, sir?

Mr. EARL MORGAN. Subsequent to that date, have you ever recorded him as being delinquent and notified him of any possible default action to be taken by the Navy?

Lieutenant Commander SPARGO. As I said, during the course of our negotiation, I advised him of the delinquency and the possible default action, as a startoff of these negotiations. This was verbal. There was no interchange. It was part of—I considered it part of the negotiations.

Mr. EARL MORGAN. Have you ever taken action to consult with counsel in the Bureau of Aeronautics to determine whether or not you would have default action against the contractor?

Lieutenant Commander SPARGO. I have not specifically, no, sir. Whether it was done within the Bureau of Aeronautics, I would have to depend on their representatives.

Mr. ROBACK. Mr. Morgan, you told us you agreed to submit the record on rejects and retesting. Now, are you following the specifications for the testing or have you waived any testing under the specifications?

Mr. LEE MORGAN. No, we are following the specifications. I was in process of describing some waivers that——

Mr. ROBACK. Well, we were talking about specification waivers, but at this point we are asking whether those specification waivers extend to the testing procedures.

Mr. LEE MORGAN. Well, yes, if the tests of the tube which we occasionally run from various lots show that——

Mr. ROBACK. You were talking about specific notations, dimensions, certain specific functional requirements that had been waived. Now I am asking whether any of the testing procedures had been waived. For example, did you waive some environmental testing because there was an urgent fleet requirement? There is some indication in the record somewhere that you waived some tests. Now, which tests were waived?

Mr. LEE MORGAN. I don't recall waiving any tests.

Mr. ROBACK. Well, maybe you don't. But what we are interested in finding out is whether any tests were waived, not whether you recall whether they were waived or not. As I had to tell Mr. Hauck last time, we can't conduct our investigations on the basis of the state of your knowledge on the subject if you can't recall.

Mr. LEE MORGAN. Well, the only substitute is to search the record and see if there is any evidence of waiver. I don't recall any waivers.

Mr. HOLIFIELD. Will you please furnish the committee any information you have on the waiver of test requirements?

Mr. ROBACK. You don't recall offhand that any tests have been waived on anything?

Mr. LEE MORGAN. No, I do not. If you have a particular item of the environmental testing you want to refer me to, we can check the records.

Mr. EARL MORGAN. Mr. Chairman, we have notice of developments on the Air Force contract for the LAU/3A which is a comparable launcher. Under date of April 4, 1958, the commander of the Air Force installation at Eglin, which is the test center that is currently testing the Air Force launcher, advised the commander of the Air Materiel Command:

> Cumulative marginal performance plus the recent bulkhead failure have made overall performance of the LAU–3A launcher unsatisfactory in its present configuration.

The contractor was subsequently advised that his preproduction samples had not met the test, and that the Air Force did not consider the preproduction sample acceptable.

In reply, the contractor advised the Air Force—one other thing in that letter of April 4. Eglin advised the Air Materiel Command that tube failures mentioned in this correspondence—

have all occurred with tubes manufactured by the Cleveland Container Co. These tubes are supposedly identical with those furnished by the same firm to the United States Navy in fabrication of the Aero 7D launcher.

In reply, the contractor stated to the Air Force, and, I quote—this is under date of April 16, 1958:

Tubes used in the preproduction samples were purchased from the Cleveland Container Co. and were part of a production lot which were made for the Be Ge Manufacturing Co. under specification, for use on the Navy contract of the Aero 7D launcher. These tubes were checked by our own inspection to make sure they were in compliance with the specifications under our contract. They were so certified by Cleveland Container and in accordance with test requirements these tubes were found to meet the specifications by an independent laboratory.

Later on the contractor states:

The fact that this specification tube did not meet the other requirements called out in the specification is not our responsibility for we had no other choice than to use this specification tube.

Again, he says:

We wish to call out that this is the same tube which has been used in building the Aero–7D launcher for the Navy and which has been accepted and is currently being used by Be Ge Manufacturing in producing this launcher. Records will show approximately 10,000 launchers have been produced by Be Ge and accepted by the Navy with the same tube which we have used in the preproduction samples which have been disapproved because of tube failure.

Further, he says:

The tube failure as you have outlined, together with the experience of having the bulkhead blow is not a new experience. Our close coordination with the production and testing of this launcher as being produced for the Navy, and its coordination through the Air Proving Ground Center has revealed that these conditions have existed since the beginning of production of the launchers for the Navy. There are records which show the failures of several bulkheads of the Navy launcher, as well as tube failures, as you have outlined in your exhibit A of March 8, however the launchers have been accepted and production continued.

Further, he says:

Approximately 6 months ago, discussions were had in meetings with personnel of the Air Proving Ground Center as well as the Navy, regarding bulkhead failure and its prevention. Damage to the aircraft has been experienced with the Navy launcher; in some instances this damage was extensive.

We, as your prime contractor, have been cognizant of marginal design features of this launcher and of the weaknesses of several of its components. It is a known fact that frequency of minor tube ruptures can be accumulated and grouped within the launcher so that major tube ruptures are caused. This has occurred in tests performed on the Navy launcher using the same tube as our preproduction sample.

This raises the question, Admiral, as to whether or not we should have some concern over these launchers that have been accepted by the Navy, made with the same tube that the Air Force has found unsatisfactory.

Admiral HINES. Well, it certainly raises a question. But I am not familiar with this experience at Eglin at all. I would like to ask if any of our other people are familiar with that.

Mr. EARL MORGAN. Before we go into that, can you answer the question as to whether or not any damage has been experienced using the Navy launcher—any aircraft damage has been experienced?

Mr. LEE MORGAN. Not as a result of any bulkhead failures. The only damage that the Navy has experienced, and I believe it is this particular incident that the contractor mentioned in his letter, has been on a particular aircraft installation at the Naval Air Test Center on the FJ–4B, in an aircraft demonstration of the FJ–4B. The FJ–4B happens to have its dive brakes located in such a position on the aircaft that when extended and rocket launchers installed on the inboard stations, the debris from the rocket principally causes punctures to the dive brakes. This is principally, as I say, damage caused by debris from the rocket. As you know, there are metal igniters on the aft end of the rockets. There are metal blowout disks. There is 4 feet of wire inside the rocket. And it was not entirely unexpected that this plane would suffer damage in that area.

Other than that damage, I can recall no other difficulty that we have had with the launcher. It has performed in its flight tests of production lot samples perfectly, and we have had no damage from bulkheads blowing. We have had bulkheads, three, I believe, come off in ground firing tests of samples at Shumaker. The Navy has rejected the launchers represented by that lot, for this failure, and requested a further statistical sample to be selected by the contractor, or by the inspector, for further tests.

The results of those tests were completely satisfactory. We accepted the launchers.

It is apparently a marginal thing and an isolated thing that will occur once in awhile, just as you will have various other components that once in awhile will show up as failures in test.

Mr. ROBACK. The fact that these failures show up once in awhile is not to be—you do not feel that that should afford a judgment as to the capacity or integrity of the producer, do you?

Mr. LEE MORGAN. No, I don't. In statistical sampling you expect failure.

Mr. ROBACK. Are the statistical samples specified in the contract—I mean in the specifications?

Mr. LEE MORGAN. Yes, they are.

Mr. ROBACK. Are you following the statistical sampling procedure in the specifications?

Mr. LEE MORGAN. We are. MIL Standard 105.

Mr. ROBACK. What was the purpose of the discussions to decide what was the acceptable quality level of samples? There is some record of a meeting to discuss this thing. Since it is specified, why do you have to determine what it ought to be?

Mr. LEE MORGAN. In the firing tests at Shumaker, it was to be anticipated that for one reason or another some samples would not fire all of their rockets. We wanted to determine on a statistical basis what level of competence we should expect in order to reject or accept the contractors product. And our quality control division, in the meeting that you are referring to, with the armament division representative, established criteria upon which to accept or reject launchers for failing to fire all of the rockets.

Fortunately, we have not had to employ this criteria because I believe all rockets have been fired successfully.

Mr. ROBACK. Have all rockets fired in all samples been tested?

Mr. LEE MORGAN. I believe there are a couple of instances where 1 or 2 rockets from a sample remained.

Mr. ROBACK. Can you give us the frequency distribution of your testing results with regard to the firing or not firing of rockets, and also the frequency distribution of the ruptures, of major tube ruptures?

Mr. LEE MORGAN. You, of course, have all the test reports in your possession.

Mr. ROBACK. I know. I asked you about waiver of testing, and you don't recall anything. The test reports have something to say on that. They are couched in technical language. And they say that tests on paragraph this or that are waived. Now, what is the waiver about? You don't know. Look at the test reports and tell us what waivers there are in the testing. Some of them have been consistently waived. Others have been waived for special purposes. Give us a clue to the kind of waiver on the testing.

Mr. LEE MORGAN. I would be happy to.

Mr. ROBACK. Give us a hint.

Mr. LEE MORGAN. I can. I have just had pointed out to me one test that we do not conduct. I would like to explain that now, if you would like me to.

The tipover test. Paragraph 4515 of the specifications. It requires the loaded launcher to be tipped over, to land on a sharp corner of a piece of 4 by 4 lumber. This test is to simulate accidental mishandling of the launcher.

Mr. ROBACK. That is different from a rough handling test, it is?

Mr. LEE MORGAN. It is part of the rough handling procedure. Now, in the laboratory, we conducted this test initially, and I think you can easily see that a piece of equipment weighing 450 pounds falling on the sharp corner of a 4 by 4 is going to put a dent in the side of it. At the laboratory, we employ dummy rockets. We have no provision for using live ammunition on Long Island.

These rockets would become bound, certain of them would become bound in the launcher due to the denting caused by the 4 by 4, and they were extracted with considerable difficulty. In fact, in one instance, I believe, we pulled the bulkhead off trying to get the rockets out in order to ship the launcher to Shumaker for the firing test.

At Shumaker then they would be loaded up again, if possible, by stuffing live ammunition down these distorted tubes. It is obvious that we were inflicting a test on the launcher far in excess of anything that could possibly happen in the field. You never pull the rockets out and then reinstall them in the field.

We knew, from previous testing, at the Naval Ordnance Test Station, that live ammunition had been subjected to this particular test many times, all rockets had fired out satisfactorily, with no damage to the launcher. On that basis, we eliminated the test.

Mr. ROBACK. What other tests can you identify as having been eliminated?

Mr. LEE MORGAN. We introduced a moisture test that is in excess of the requirements of—it happens to be in excess of the requirements of the specification. But we did it for two reasons. It is a tough test, and it is a good indication, a quick indication, and an easy indication of leakage. It involves paragraph 4513, pressure retention, in which we install special end pans, brush the entire surface of the launcher with a water soap solution——

Mr. ROBACK. I thought you had discontinued the moisture tests on these launchers because they were sealed up. Didn't you tell us last time that you didn't have any moisture test, that that was an Air Force specification?

Mr. LEE MORGAN. I don't recall that.

At any rate, we are conducting moisture tests. I will describe the one we are now conducting, which is a very severe test.

We actually take the loaded launcher and stick it in a bath, and completely submerge it, completely put under water. And they have to pass that test. And they do pass that test. This gives an immediate indication if you have any leakage to the laboratory test personnel, so we accomplish a speedup in the test time, as well as assuring ourselves of a superior product.

That test is used, called the waterproofness test per MIL–P116, which is a packaging specification test, and we perform that test in lieu of the pressure retention test, paragraph 4513—a most severe test.

Mr. ROBACK. Will you also advise us when you check the records what tests were waived because there was an urgency in delivery requirements, to either fleet or some facility?

Mr. HOLIFIELD. Mr. Morgan?

Mr. EARL MORGAN. Mr. Evans, you have been an engineering coordinator, more or less, with the Air Force in this 19-round rocket launcher, have you not?

Mr. EVANS. Yes, on occasion. Not full time.

Mr. EARL MORGAN. In April of this year you were in attendance at a meeting in Eglin to discuss some of the problems encountered by the Air Force contractor. And the contractor refers to this meeting in a letter of April 28. He points out:

> Six months ago the problem of bulkhead failure was discussed. The Navy has recommended a type of fix for the bulkhead to the retainer ring which was to be tried within a week or 10 days on launchers now at the proving ground. It was stated by Mr. Evans he would probably in about 2 weeks be giving to the Navy contractor of the Aero–7D engineering changes so as to permit this fix between the bulkhead and retainer ring on their production. After approximately one and a half hours of discussion, it was agreed by all present the cause of disapproval of our preproduction sample was "major damage to the tube." It was stated by Mr. Evans that the tube failure as shown on these tests was the same type of failures as experienced by the Navy. They also have experienced the bulkhead failure. It was pointed out to all present that the tubes which we use in the preproduction samples were produced by Cleveland Container Co. and were taken from production lots made for the Navy coontractor and inspected by Navy inspection. It was pointed out there are approximately 200,000 of these tubes now in launchers which the Navy had accepted.

What is your explanation, Mr. Evans, as to the different results on these two contracts which have used practically the same specifications, the same testing procedure? Why is it that the Navy considers the Aero-7D acceptable, and has not rejected any, and yet the Air Force can't even get the preproduction samples qualified?

Mr. EVANS. Are you asking me to give my opinion of the Air Force decision?

Mr. EARL MORGAN. I am asking you for your opinion as to the differences in performance of these two launchers, using the same tube and the same specifications.

Mr. EVANS. I see no difference. The only difference is that the Air Force has not tested and fired as many launchers as the Navy has.

Mr. ROBACK. What has that got to do with the production?

Mr. EVANS. Well, as a matter of statistical analysis on a failure such as that, where you are basing your acceptance on random sampling in accordance with standard 105——

Mr. ROBACK. The Air Force has no production to test random sampling. The Air Force is in the process of qualifying 260 preproduction samples. That is not a random proposition. That is a drudgery of going through them 1 by 1.

Mr. EVANS. They have fired 56 launchers according to their verbal statements to me.

Mr. ROBACK. Are you giving us your technical judgment that the Air Force has not done enough testing to sustain the judgment that it has sustained?

Mr. EVANS. I can only state——

Mr. ROBACK. Is that your judgment?

Mr. LEE MORGAN. I don't think it is fair to ask him to express such a judgment of the Air Force. He hasn't been intimate enough with their methods of testing. You can't overlook the fact there are two different suppliers involved here. It is a completely unfair question, I think.

Mr. ROBACK. We don't want to ask any unfair questions. But at the same time we want to find out whether perhaps the Air Force is not adequately performing its responsibilities. We are entitled to the best engineering advice we can get in the Government. The possibilities are several. Either the Air Force is deficient, or the Navy is deficient, or the manufacturer is deficient, or all of them are.

Mr. LEE MORGAN. We have made available to the Air Force, on call, the services of Mr. Evans and our people, since we consider this a mutual program. However, he has not lived with this program. The Air Force personnel have people that actively pursue it and are responsible for the testing, and an analysis of the results, and whether their particular supplier is meeting the requirements of their contract. Our contract——

Mr. HOLIFIELD. We will have the Air Force before us tomorrow, and we will refer that question to them. I agree with your statement that we should not call upon Mr. Evans to render a judgment upon the evaluation of the Air Force in which he does not have the full facts.

Mr. EARL MORGAN. Well, Mr. Evans, did you make the statement at that meeting that the tube failures, as shown on the Air Force tests, were the same type of failures as experienced by the Navy?

Mr. EVANS. According to their verbal description of them; yes. I showed them a representative sample of the Shumaker reports, in which there are a few minor tube ruptures and tube cracks.

Mr. EARL MORGAN. Well, did you verify whether or not these tubes did come from lots that were furnished to the Navy contractor? Were these tubes furnished to Chromcraft from the same lot furnished to Be Ge by Cleveland Container?

Mr. EVANS. I can only say yes on the basis of that is what I was told.

Mr. EARL MORGAN. Well, have you done anything to check the lots containing those same tubes, or the tubes from that same Cleveland Container lot?

Mr. EVANS. No.

Mr. EARL MORGAN. So the Navy apparently is not concerned about these Air Force failures.

Mr. LEE MORGAN. We feel that we have a completely adequate qualification program.

Admiral HINES. I think it is only fair to say, Mr. Chairman, that this, after all, is a rather complex composite type structure involving the use of very light materials and quite different ones as to the physical properties. And rather small differences in manufacturing techniques can make a very substantial difference in performance of the launcher as a whole.

Mr. ROBACK. You are trying to hang that difficulty of Be Ge on a difference in their production techniques.

Admiral HINES. No, I am not trying to hang anything on anybody.

Mr. ROBACK. I mean that was an inference from your testimony, that these little corrections made better production situations. But, actually, there were some basic problems in the specifications. This thing is still a developmental item.

Admiral HINES. I am only trying to draw a distinction between somebody who has produced a fairly large number of these things, and had a large number of them subjected to test, and somebody who is just getting into construction of this thing.

Mr. ROBACK. Do you feel that on the basis of the Air Force and the Navy experience to date, in the rocket launcher production field, that the way you instituted this procurement is a wise procedure?

Mr. LEE MORGAN. I think that the record——

Mr. ROBACK. I asked the admiral that. You can supplement it.

Mr. LEE MORGAN. I am sorry.

Admiral HINES. I think that you can always, by hindsight, speculate on a procedure, a different procedure which might have been more successful. However, on the basis of what I have been told about this thing, and the experience to date, I doubt that any procedure we could have adopted would have more satisfactory launchers in our hands today than we have now.

Mr. LEE MORGAN. I would like to go on record and say that repeating the same situation and the same events as they were then, I would do the same thing today. I am convinced it was a sound decision.

Mr. ROBACK. The question is how many failures can you tolerate without reexamining the problem.

Mr. LEE MORGAN. From all that we have examined to date, we are accepting launchers that perform splendidly, in my opinion.

Mr. ROBACK. You are the beneficiary of the happy circumstance that Navy requirements are no longer so urgent. You are a beneficiary of that happy circumstance.

Mr. LEE MORGAN. I would deny that.

Mr. ROBACK. I would like to ask the admiral one unrelated question.

The Navy sent the Department of Justice, with regard to one of the former producers of the rocket launcher, a list of items concern-

ing possible fraud actions. Do you have any response from the Department of Justice beyond the acknowledgement of that?

Admiral HINES. Not that I know of. I would like to ask Mr. Sass.

Mr. ROBACK. Mr. Sass is an old friend who is looking on with a rather unhappy countenance. He hates to discuss contract terms around the table here. He is a lawyer.

Admiral HINES. I know that. And I am sure he is very unhappy about some of the things I have said.

Mr. ROBACK. It is hard to get anything out of Mr. Sass.

Mr. Sass?

Mr. SASS. As far as I know, we have had no answer other than an acknowledgment from Justice, no further information from them.

Mr. HOLIFIELD. Any further questions?

Mr. ROBACK. We have asked for certain information, and we may want a little bit more, Mr. Chairman.

Mr. HOLIFIELD. Admiral, will you furnish such information as the staff may require? We would like to wrap this up in a few days. I am sure you folks in the Navy will be glad to get this off of your calendar, too.

Admiral HINES. Yes, sir, we will.

Mr. ROBACK. They will have to wait until January, Mr. Chairman, to get the rest of the launchers, they hope.

Mr. HOLIFIELD. Well, let us hope it is no later than January. I might say that it is a good thing we have not needed launchers during this interim period of about 2½ or 3 years when all of the contract delivery requirements have had to be extended because of lack of performance on the part of your contractors.

The meeting is adjourned.

(Whereupon, at 12:15 p. m., the committee recessed, to reconvene at 10 a. m., Tuesday, July 15, 1958.)

(The following information was subsequently received:)

HOUSE OF REPRESENTATIVES,
MILITARY OPERATIONS SUBCOMMITTEE,
OF THE COMMITTEE ON GOVERNMENT OPERATIONS,
Washington, D. C., July 15, 1958.

Captain JOHN S. MCCAIN, Jr.,
Chief of Legislative Liaison,
Department of the Navy, Washington, D. C.

DEAR CAPTAIN MCCAIN: To supplement the Navy testimony at the hearing on July 14, we would appreciate receiving the following information, which includes matters raised at the hearing.

1. Submit copies of all contract modifications to date, starting with modification No. 11, on the Be Ge contract, N600(a)42125, awarded June 7, 1956.

2. Cite the dates on which the contractor was notified by the contracting officer or other Navy representatives that he was in a state of delinquency on the contract. Were any notices of possible default proceedings given in any of these instances?

3. Describe briefly the waivers in laboratory and field testing of production quantity rocket launchers delivered by the contractor, and identify which waivers were due to urgent delivery demands by field or fleet activities.

4. Identify the launcher lots rejected in laboratory and field testing, citing dates tested, the reasons for rejection, and dates retested and approved.

5. On the basis of sample tests of production launchers to date, give a frequency distribution of the major defects that may be expected in these production launchers, including rocket firing failures and tube ruptures.

6. Cite the periods during which the contractor suspended production operations and the reasons therefor.

7. Estimate the costs incurred by the Navy in investigating and testing alternate tube sources and materials for possible use in the production of 19-round expendable rocket launchers.

Sincerely yours,

HERBERT ROBACK, *Staff Administrator.*

DEPARTMENT OF THE NAVY,
BUREAU OF AERONAUTICS,
Washington, D. C., July 22, 1958.

From: Chief, Bureau of Aeronautics.
To: Chief of Legislative Liaison.
Subject: Military Operations Subcommittee request for information on Aero 7D rocket launchers.
Reference: (a) OLL letter OLL:INV:SBF:es of July 15, 1958.
(b) Subcommittee staff letter dated July 16, 1958.
Enclosure: (1) Answers to questions posed in reference (b).
(2) Corrected report of proceedings of hearing before subject subcommittee on July 14, 1958.

1. Answers to questions 1 through 5, and 7, contained in reference (a), are forwarded as enclosure (1). The answer to question 6, which will require 10 days to prepare, will be submitted when complete.

2. Enclosure (2) has been reviewed and corrected as appropriate. All corrections have been made on the transcript. It should be noted that the testimony offered by Mr. Lee Morgan regarding the lot number changeover from Cleveland Container to Globe Be Ge tubes made repeated reference to lot 76. This is in error, and in each case should read lot 110. References to this appear on pages 16 through 22, and page 29 of the transcript.

R. E. DIXON.

Question 1. Submit copies of all contract modification to date, starting with modification No. 11, on the Be Ge contract, N600(a)42125, awarded June 7, 1956.

Answer. Modifications 11 through 20 are attached.

CONTRACT MODIFICATION
NAV. S. AND A. FORM 112 (SPT) (5-56)

Page 1 of 1

ISSUED BY:
U. S. NAVY PURCHASING OFFICE
TEMPO "D" BUILDING
4th & INDEPENDENCE AVENUE, S. W.
WASHINGTON 25, D. C.

REQUISITION/PURCHASE AUTH.: NN11-4631-56
CONTRACT/ORDER NO.: N600(A)42125
MODIFICATION NO. AND DATE: 11 26 April 1957
REFERENCE: SPG-1k

TO:
BeGe Manufacturing Company
Leavesley Road
Gilroy, California

MODIFICATION AUTHORITY (Check one)
- "Changes" Clause
- Sec 2c ( ) ASPA 1947
- X Within General Scope of the Contract
- CONTRACT CLAUSE ENTITLED
- OTHER

ACCOUNTING CLASSIFICATION

APPROPRIATION AND SUBHEAD	OBJECT CLASS.	EXPENDITURE ACCOUNT	CHARGEABLE ACTIVITY	BUREAU CONTROL ACTIVITY NO.	BUREAU CONTROL NO.	AMOUNT *Indicate decrease by (CR)*
1761502.90						

☐ Pursuant to the "Changes" clause you are hereby directed to make the following change(s):

☒ The above numbered contract is hereby amended, as of the above date, in the following respects only:

Under paragraph 1(d) of the clause entitled PRE-PRODUCTION SAMPLES on page 4 of the Contract Schedule, the last two sentences beginning with the word "Such" and ending with the word "contract" are deleted.

The Pre-production samples shipped per instructions contained in Revision Number 9 will be accepted by the consignees specified therein for Navy invoicing purposes.

The price and all other terms and conditions of the contract remain unchanged.

Copy to:
SPD-1a
SPH-3a
SPT-2a
INM San Francisco, Calif.
BuOrd, MA3B-2
BuS&A, HB22-1, Rm. 1627 Arlex
Buler Codes MA-3621, MA-3, MA-301 and CT-432
Dayton T. Brown, Copiague, Long Island, N.Y., c/o AINM Sperry Gyroscope Co.
Great Neck, Long Island, N.Y.

☒ ACCEPT ☐ ACKNOWLEDGE ☐ NO REPLY REQUIRED

THE UNITED STATES OF AMERICA
By: GEORGIE S. WADE Contracting Officer

ACCEPTANCE
Return two (2) signed copies to issuing office. Signature must be that of person authorized to sign for contractor.

ACCEPTED BY *(Signature)* *(Title)*
DATE:

ACKNOWLEDGMENT
Return two (2) properly acknowledged copies to issuing office. Retain signed copy. Signature must be that of person authorized to sign for contractor.

The undersigned hereby acknowledges receipt on _____ 19___ of signed copy of above Change Order.
(Signature) *(Title)*

SPG-1k
N600(A)42125
Rev. 11

Copy to: (continued)
INSORD US NAD Shumaker, Arkansas
BAR North American Aviation, Columbus, Ohio
BAR El Segundo Div. Douglas Aircraft Corp., El Segundo, Calif.
CO NOTS China Lake, Calif. Code 40135
SPG-E for:
NRAO NSC Oakland, Calif.
GAO Audit Div., Cleveland, Ohio (1)
FD BuAer
SPR-2c Master & File

CONTRACT MODIFICATION
NAV. S. AND A. FORM 112 (SPT) (5-56) Page 1 of 2

ISSUED BY:
U. S. NAVY PURCHASING OFFICE
TEMPO "D" BUILDING
4th & INDEPENDENCE AVENUE, S. W.
WASHINGTON 25, D. C.

REQUISITION/PURCHASE AUTH.: N111-4631-56
CONTRACT/ORDER NO.: N600(A)42125
MODIFICATION NO. AND DATE: 12 — 5 August 1957
REFERENCE:

TO:
Be Ge Manufacturing Company
Leavesley Road
Gilroy, California

MODIFICATION AUTHORITY (Check one)
- [X] "Changes" Clause
- [ ] Sec 2c ( ) ASPA 1947
- [ ] Within General Scope of the Contract
- [ ] CONTRACT CLAUSE ENTITLED
- [ ] OTHER

ACCOUNTING CLASSIFICATION

APPROPRIATION AND SUBHEAD	OBJECT CLASS.	EXPENDITURE ACCOUNT	CHARGEABLE ACTIVITY	BUREAU CONTROL ACTIVITY NO.	BUREAU CONTROL NO.	AMOUNT Indicate decrease by (CR)
176 1502.90						

[X] Pursuant to the "Changes" clause you are hereby directed to make the following change(s):

[ ] The above numbered contract is hereby amended, as of the above date, in the following respects only:

Provide for the Manufacture of 24 Aero 7D Launchers incorporating the Globe Container Company internal tubes in lieu of Cleveland Container Company tubes.

Upon completion of the above launches ship to Dayton T. Brown, Inc. 1305 Strong Road Copiague, Long Island, N. Y., c/o Ainsmat Sperry Gyroscope Co, Great Neck, Long Island, New York.

The price and all other terms and conditions of the contract remain unchanged.

cc:
SPD-1a
SPH-3a
SPT-2a
Insmat, San Francisco, Calif.
BuOrd, Code MA3B-2
BuS&A, H3221, Rm. 1627 Arlex
BuAer, Codes MA-362, MA-3621, MA-3 and CT-432
Dayton T. Brown, 1305 Strong Road, Copiague Long Island, N. Y., c/o Ainsmat Sperry Gyroscope Co., Great Neck, L. I., N. Y.

[ ] ACCEPT [X] ACKNOWLEDGE [ ] NO REPLY REQUIRED

THE UNITED STATES OF AMERICA
By: R. J. De VILBISS Contracting Officer

ACCEPTANCE
Return two (2) signed copies to issuing office. Signature must be that of person authorized to sign for contractor.

ACCEPTED BY (Signature) (Title)
DATE:

ACKNOWLEDGMENT
Return two (2) properly acknowledged copies to issuing office. Retain signed copy. Signature must be that of person authorized to sign for contractor.

The undersigned hereby acknowledges receipt on ____ 19__, of signed copy of above Change Order.
(Signature) (Title)

(Cont'd)

Insord NS NAD, Shumaker, Ark.
BAR, North American Aviation, Columbus, Ohio
BAR, El Segundo Div., Douglas Aircraft Corp., El Segundo, Calif.
Co, NOTS, China Lakes Calif Code 40135
GAO Audit Div., Cleveland, Ohio
SPG-E for:
NRAO, NSC, Oakland, Calif.
FD Bu Aero
SPH-2c Master & File

CONTRACT MODIFICATION
NAV. S. AND A. FORM 112 (SPT) (5-56)

Page 1 of 2

ISSUED BY:

U. S. NAVY PURCHASING OFFICE
TEMPO "D" BUILDING
4th & INDEPENDENCE AVENUE, S. W.
WASHINGTON 25, D. C.

REQUISITION/PURCHASE AUTH.	CONTRACT/ORDER NO.
EN11-4631-56	N600(A)42125

MODIFICATION NO. AND DATE: 13 — 13 August 1957

REFERENCE: SPG-1k:RWW:ld

TO:

Be Ge Manufacturing Company
Leawesley Road
Gilroy, California

MODIFICATION AUTHORITY (Check one)

- [x] "Changes" Clause
- [ ] Sec 2c ( ) ASPA 1947
- [ ] Within General Scope of the Contract
- [ ] CONTRACT CLAUSE ENTITLED
- [ ] OTHER

ACCOUNTING CLASSIFICATION

APPROPRIATION AND SUBHEAD	OBJECT CLASS.	EXPENDITURE ACCOUNT	CHARGEABLE ACTIVITY	BUREAU CONTROL ACTIVITY NO.	BUREAU CONTROL NO.	AMOUNT *Indicate decrease by (CR)*
1761502,90						

- [x] Pursuant to the "Changes" clause you are hereby directed to make the following change(s):
- [ ] The above numbered contract is hereby amended, as of the above date, in the following respects only:

Provide for the incorporation of the following Engineering Change Proposals Numbers 39, 98, 99 and 120 through 151 except 122 and 125.

Please advise what change in price will result due to the above changes giving a detailed price breakdown.

All other terms and conditions of the contract remain unchanged.

cc:
SPD-1a
SPH-3a
SPF-2a
Insmat, San Francisco, Calif.
BuOrd, Code MA3B-2
BuSdA, H3221, Rm. 1627 Arlex
BuAer, Codes MA-462, MA-3621, MA-3 and CT-432
Dayton T. Brown, 1305 Strong Road. Copiague Long Island, N.Y., c/o Ainsmat Sperry Gyroscope Co., Great Neck, L. I., N. Y.

- [ ] ACCEPT
- [x] ACKNOWLEDGE
- [ ] NO REPLY REQUIRED

THE UNITED STATES OF AMERICA
By: R. J. De VILBISS — Contracting Officer

ACCEPTANCE
Return two (2) signed copies to issuing office. Signature must be that of person authorized to sign for contractor.

ACCEPTED BY *(Signature)* *(Title)*

DATE:

ACKNOWLEDGMENT
Return two (2) properly acknowledged copies to issuing office. Retain signed copy. Signature must be that of person authorized to sign for contractor.

The undersigned hereby acknowledges receipt on_____19____, of signed copy of above Change Order.
(Signature) *(Title)*

(Cont'd)

Insord NS NAD, Shumaker, Ark,
BAR, North American Aviation, Columbus, Ohio
BAR, El Segundo Div., D ouglas Aircraft Corp., El Segundo, Calif.
CO, NOTS, China Lakes Calif Code 40135
GAO Audit Div., Cleveland, Ohio
SPG-E (2 copies)
SPG-E for:
NRAO, NSC, Oakland, California
ED Bu Aero
SPH-2c Master & File

CONTRACT MODIFICATION
NAV. S. AND A. FORM 112 (8PT) (5-56) Page 1 of

ISSUED BY:
U. S. NAVY PURCHASING OFFICE
TEMPO "D" BUILDING
4th & INDEPENDENCE AVENUE, S. W.
WASHINGTON 25, D. C.

REQUISITION/PURCHASE AUTH.: EN11-4631-56
CONTRACT/ORDER NO.: N600(A)42125
MODIFICATION NO. AND DATE: 14 28 August 1957
REFERENCE: SPG-lk:RWW:hw

TO:
Be Ge Manufacturing Company
Leavesley Road
Gilroy, California

MODIFICATION AUTHORITY (Check one)
- "Changes" Clause
- Sec 2c ( ) ASPA 1947
- x Within General Scope of the Contract
- CONTRACT CLAUSE ENTITLED
- OTHER

ACCOUNTING CLASSIFICATION

APPROPRIATION AND SUBHEAD	OBJECT CLASS.	EXPENDITURE ACCOUNT	CHARGEABLE ACTIVITY	BUREAU CONTROL ACTIVITY NO.	BUREAU CONTROL NO.	AMOUNT Indicate decrease by (CR)
1761502.90						

☐ Pursuant to the "Changes" clause you are hereby directed to make the following change(s):

☒ The above numbered contract is hereby amended, as of the above date, in the following respects only:

The following Government Furnished Equipment is hereby incorporated into this contract:

Item	Description	Quantity
1	54A46R3-AJ1 Assembly Jig, 21656-101T-USN	1 ea
2	54A46R2-WF1 Weld Fixture, 21656-98T-USN	1 ea
3	55A22-207-AJ1 Assembly Jig, 21779-106T-USN	1 ea
4	55A22-207-AJ2 Assembly Jig, 21779-101T-USN	1 ea
5	54A46C240-PD1 Tube Punch and Slotter, 21873-22T-USN	1 ea
6	55A22-101-TF1 Continuity Test Fixture 21873-46T-USN	1 ea
7	Tube Grinding Fixture 55A-22-317-GT2 (Serial 10570)	1 ea

The attached clause, NPO Form 18 (Rev. 27 April 1955) Government-Furnished Property, is hereby made a part of this contract.

Please advise what reduction in price will be offered as a result of the above.

All other terms and conditions of the contract remain unchanged.

☒ ACCEPT ☐ ACKNOWLEDGE ☐ NO REPLY REQUIRED

THE UNITED STATES OF AMERICA
By: GEORGE S. WADE Contracting Officer

ACCEPTANCE
Return two (2) signed copies to issuing office. Signature must be that of person authorized to sign for contractor.

ACCEPTED BY *(Signature)* *(Title)*
DATE:

ACKNOWLEDGMENT
Return two (2) properly acknowledged copies to issuing office. Retain signed copy. Signature must be that of person authorized to sign for contractor.

The undersigned hereby acknowledges receipt on _____ 19___ of signed copy of above Change Order.
(Signature) *(Title)*

SPG-1k:RWW:bw
N600(A)42125
Rev. 14

Copy to:
SPD-1a
SPH-3a
SPF-2a
INSMAT, San Francisco, Calif.
BuOrd, Code MA3B-2
BuS&A, H3221, Rm. 1627, Arlex
BuAer, Codes MA-462, MA-3621, MA-3 and CT-432
Dayton T. Brown, 1305 Strong Road, Copiague Long Island, N.Y., c/o Ainsmat
Sperry Gyroscope Co., Great Neck, L.I., N.Y.
SPG-1k (Hold)
Insord NS NAD Shumaker, Ark.
BAR North American Aviation, Columbus, Ohio
BAR El Segundo Div., Douglas Aircraft Corp., El Segundo, Calif.
CO NOTS China Lakes, Calif., Code 40135
SPG-2 for:
NRAO NSC Oakland, Calif.
GAO Audit Div., Cleveland, Ohio
FD BuAero
SPH-2c Master & File

GOVERNMENT-FURNISHED PROPERTY

(a) The Government shall deliver to the Contractor, for use in connection with and under the terms of this contract, the property described in the Schedule or specifications, together with such related data and information as the Contractor may request and as may reasonably be required for the intended use of such property (hereinafter referred to as "Government-furnished Property"). The delivery or performance dates for the supplies or services to be furnished by the Contractor under this contract are based upon the expectation that Government-furnished Property suitable for use will be delivered to the Contractor at the time stated in the Schedule or, if not so stated, in sufficient time to enable the Contractor to meet such delivery or performance dates. In the event that Government-furnished Property is not delivered to the Contractor by such time or times, the Contracting Officer shall, upon timely written request made by the Contractor, make a determination of the delay occasioned the Contractor thereby, and shall equitably adjust the delivery or performance dates or the contract price, or both, and any other contractual provision effected by such delay, in accordance with the procedures provided for in the clause of this contract entitled "Changes." In the event the Government-furnished Property is received by the Contractor in a condition not suitable for the intended use the Contractor shall, upon receipt thereof, notify the Contracting Office of such fact and, as directed by the Contracting Officer, either (i) return such property at the Government's expense or otherwise dispose of the property, or (ii) effect repairs or modifications. Upon the completion of (i) or (ii) above, the Contracting Officer upon written request of the Contractor shall equitably adjust the delivery or performance dates or the contract price, or both, and any other contractual provision affected by the rejection or disposition, or the repair or modification, in accordance with the procedures provided for in the clause of this contract entitled "Changes." The foregoing provisions for adjustment are exclusive and the Government shall not be liable to suit for breach of contract by reason of any delay in delivery of Government-furnished Property or delivery of such property in a condition not suitable for its intended use.

(b) By notice in writing the Contracting Officer may decrease the property furnished or to be furnished by the Government under this contract. In any such case, the Contracting Officer upon the written request of the Contractor shall equitably adjust the delivery or performance dates or the contract price, or both, and any other contractual provisions affected by the decrease, in accordance with the procedures provided for in the clause of this contract entitled "Changes."

(c) Title to the Government-furnished Property shall remain in the Government. Title to Government-furnished Property shall not be affected by the incorporation or attachment thereof to any property not owned by the Government, nor shall such Government-furnished Property, or any part thereof, be or become a fixture or lose its identity as personalty by reason of affixation to any realty. The Contractor shall maintain adequate property control records of Government-furnished Property in accordance with the requirements of the "Manual for Control of Government Property in Possession of Contractors" (Appendix B, Armed Services Procurement Regulation) as in effect on the date of the contract, which Manual is hereby incorporated by reference and made a part of this contract.

(d) The Government-furnished Property shall, unless otherwise provided herein, be used only for the performance of this contract.

(e) The Contractor shall maintain and administer, in accordance with sound industrial practice, a program for the maintenance, repair, protection and preservation of Government-furnished Property until disposed of by the Contractor in accordance with this clause. In the event that any damage occurs to Government-furnished Property the risk of which has been assumed by the Government under this contract, the Government shall replace such items or the Contractor shall make such repair of the property as the Government directs; *provided, however,* that if the Contractor cannot effect such repair within the time required, the Contractor shall dispose of such property in the manner directed by the Contracting Officer. The contract price includes no compensation to the Contractor for the performance of any repair or replacement for which the Government is responsible, and an equitable adjustment will be made in the contract price for any such repair or replacement of Government-furnished Property made at the direction of the Government. Any

repair or replacement for which the Contractor is responsible under the provisions of this contract shall be accomplished by the Contractor at its own expense.

(f) (i) Except for loss, destruction, or damage resulting from a failure of the Contractor due to willful misconduct or lack of good faith of any of the Contractor's managerial personnel as defined herein, to maintain and administer the program for the maintenance, repair, protection and preservation of the Government-furnished Property, as required by paragraph (e) hereof, and except as specifically provided in the clause or clauses of this contract designated in the Schedule, the Contractor shall not be liable for loss or destruction of or damage to the Government-furnished Property (A) caused by any peril while the property is in transit off the Contractor's premises, or (B) caused by any of the following perils while the property is on the Contractor's or subcontractor's premises, or on any other premises where such property may properly be located, or by removal therefrom because of any of the following perils:

(I) Fire; lighting; windstorm, cyclone, tornado, hail; explosion; riot, riot attending a strike, civil commotion; vandalism and malicious mischief; sabotage; aircraft or objects falling therefrom; vehicles running on land or tracks, excluding vehicles owned or operated by the Contractor or any agent or employee of the Contractor; smoke; sprinkler leakage; earthquake or volcanic eruption; flood, meaning thereby rising of a body of water; hostile or warlike action, including action in hindering, combating, or defending against an actual, impending or expected attack by any government or sovereign power (de jure or de facto), or by any authority using military, naval, or air forces, or by an agent of any such government, power, authority, or forces; or

(II) Other peril, of a type not listed above, if such other peril is customarily covered by insurance (or by a reserve for self-insurance) in accordance with the normal practice of the Contractor, or the prevailing practice in the industry in which the Contractor is engaged with respect to similar property in the same general locale.

The perils as set forth in (A) and (B) above are hereinafter called "excepted perils."

This clause shall not be construed as relieving a subcontractor from liability for loss or destruction of or damage to the Government-furnished Property while in its possession or control, except to the extent that the subcontract, with the prior approval of the Contracting Officer, may provide for the relief of the subcontractor from such liability. In the absence of such approval, the subcontract shall contain appropriate provisions requiring the return of all Government-furnished Property in as good condition as when received, except for reasonable wear and tear or for the utilization of the property in accordance with the provisions of the prime contract.

The term "Contractor's managerial personnel" as used herein means the Contractor's directors, officers and any of its managers, superintendents, or other equivalent representatives who have supervision or direction of (I) all or substantially all of the Contractor's business; (II) all or substantially all of the Contractor's operation at any one plant or separate location at which the contract is being performed; (III) a separate and complete major industrial operation in connection with the performance of this contract.

(ii) The Contractor represents that it is not including in the price hereunder, and agrees that it will not hereafter include in any price to the Government, any charge or reserve for insurance (including self-insurance funds or reserve) covering loss or destruction of or damage to the Government-furnished Property caused by any excepted peril.

(iii) Upon the happening of loss or destruction of or damage to any Government-furnished Property caused by an excepted peril, the Contractor shall notify the Contracting Officer thereof, and shall communicate with the Loss and Salvage Organization, if any, now or hereafter designated by the Contracting Officer, and with the assistance of the Loss and Salvage Organization so designated (unless the Contracting Officer has directed that no such organization be employed), shall take all reasonable steps to protect the Government-furnished Property from further damage, separate the damaged and undamaged Government-furnished Property, put all the Government-furnished Property in the best possible order, and furnish to the Contracting officer a statement of: (A) the lost, destroyed and damaged Government-furnished Property (B) the time and origin of the loss, destruction or damage, (C) all known interests in commingled property of which the Government-furnished Property is a part, and (D) the insur-

ance, if any, covering any part of or interest in such commingled property. The Contractor shall be reimbursed for the expenditures made by it in performing its obligations under this subparagraph (iii) (including charges made to the Contractor by the Loss and Salvage Organization, except any of such charges the payment of which the Government has, at its option, assumed directly), to the extent approved by the Contracting Officer and set forth in a Supplemental Agreement.

(iv) With the approval of the Contracting Officer after loss or destruction of or damage to Government-furnished Property, and subject to such conditions and limitations as may be imposed by the Contracting Officer, the Contractor may, in order to minimize the loss to the Government or in order to permit resumption of business or the like, sell for the account of the Government any item of Government-furnished Property which has been damaged beyond practicable repair, or which is so commingled or combined with property of others, including the Contractor, that separation is impracticable.

(v) Except to the extent or any loss or destruction of or damage to Government-furnished Property for which the Contractor is relieved of liability under the foregoing provisions of this clause, and except for reasonable wear and tear or depreciation, or the utilization of the Government-furnished Property in accordance with the provisions of this contract, the Government-furnished Property (other than property permitted to be sold) shall be returned to the Government in as good condition as when received by the Contractor in connection with this contract, or as repaired under paragraph (e) above.

(vi) In the event the Contractor is reimbursed or compensated for any loss or destruction of or damage to the Government-furnished Property, caused by an excepted peril, it shall equitably reimburse the Government. The Contractor shall do nothing to prejudice the Government's rights to recover against third parties for any such loss, destruction or damage and, upon the request of the Contracting Officer, shall at the Government's expense, furnish to the Government all assistance and cooperation (including the prosecution of suit and the execution of instruments of assignment in favor of the Government) in obtaining recovery. In addition, where a subcontractor has not been relieved from liability for any loss or destruction of or damage to the Government-furnished Property, the Contractor shall enforce the liability of the subcontractor for such loss or destruction of or damage to the Government-furnished Property for the benefit of the Government.

(vii) (Where applicable) In the event any aircraft are to be furnished under this contract, any loss or destruction of, or damage to, such aircraft or other Government-furnished Property occurring in connection with operations of said aircraft will be governed by the clause of this contract captioned "Flight Risks," to the extent such clause is by its terms, applicable.

(g) The Government shall at all reasonable times have access to the premises wherein any Government-furnished Property is located.

(h) Upon the completion of this contract, or at such earlier dates as may be fixed by the Contracting Officer, the Contractor shall submit, in a form acceptable to the Contracting Officer, inventory schedules covering all items of Government-furnished Property not consumed in the performance of this contract (including any resulting scrap), or not theretofore delivered to the Government, and shall deliver or make such other disposal of such Government-furnished Property, as may be directed or authorized by the Contracting Officer. Recoverable scrap from Government furnished Property shall be reported in accordance with a procedure and in such form as the Contracting Officer may direct. The net proceeds of any such disposal shall be credited to the contract price or shall be paid in such other manner as the Contracting Officer may direct.

(i) Directions of the Contracting Officer and communications of the Contractor issued pursuant to this Clause shall be in writing.

CONTRACT MODIFICATION
NAV. S. AND A. FORM 112 (SPT) (5-56) Page 1 of 2

ISSUED BY:
U. S. NAVY PURCHASING OFFICE
TEMPO "D" BUILDING
4th & INDEPENDENCE AVENUE, S. W.
WASHINGTON 25, D. C.

REQUISITION/PURCHASE AUTH.: NAVI-4631-56
CONTRACT/ORDER NO.: N600(A)42125
MODIFICATION NO. AND DATE: 15 — 23 September 1957
REFERENCE: SPG-1k:RWW:ld

TO:
Be Go Manufacturing Company
Leavesley Road
Gilroy, California

MODIFICATION AUTHORITY (Check one)
- [X] "Changes" Clause
- [ ] Sec 2c ( ) ASPA 1947
- [ ] Within General Scope of the Contract
- [ ] CONTRACT CLAUSE ENTITLED
- [ ] OTHER

ACCOUNTING CLASSIFICATION

APPROPRIATION AND SUBHEAD	OBJECT CLASS.	EXPENDITURE ACCOUNT	CHARGEABLE ACTIVITY	BUREAU CONTROL ACTIVITY NO.	BUREAU CONTROL NO.	AMOUNT (Indicate decrease by (CR))
17161502.90						

[X] Pursuant to the "Changes" clause you are hereby directed to make the following change(s):

[ ] The above numbered contract is hereby amended, as of the above date, in the following respects only:

Provide for the incorporation of Engineering Change Proposal Number 152.

Please advise what change in price will result due to the above change giving a detailed price breakdown.

All other terms and conditions of the contract remain unchanged.

cc:
SPD-1a
SPH-3a
Insmat, San Francisco, Calif.
BuOrd, Code MA3B-2
BuS&A, H3221, Rm. 1627 Arlex
BuAer, Codes MA-468, MA-3621, MA-3, and CT-432
Dayton T. Brown, 1305 Strongtoad Copiague Long Island, N. Y., c/o Ainsmat Sperry Grroscope Co., Great Neck, L. I., N. Y.
Insord NS NAD, Shumaker, Ark
BAR, North American Aviation, Columbus, Ohio
BAR El Segundo Div., Douglas Aircraft Corp., El Segundo, Calif.

[ ] ACCEPT [X] ACKNOWLEDGE [ ] NO REPLY REQUIRED

THE UNITED STATES OF AMERICA
By: R. J. De VILBISS — Contracting Officer

ACCEPTANCE
Return two (2) signed copies to issuing office. Signature must be that of person authorized to sign for contractor.

ACCEPTED BY *(Signature)* *(Title)*
DATE:

ACKNOWLEDGMENT
Return two (2) properly acknowledged copies to issuing office. Retain signed copy. Signature must be that of person authorized to sign for contractor.

The undersigned hereby acknowledges receipt on _____ 19___, of signed copy of above Change Order.
(Signature) *(Title)*

Copy to: (Cont'd)
CO, NOTS, China Lakes Calif Code 40135
GAO Audit Div., Cleveland, Ohio
SPG-E (2 copies)
SPG-E for:
NRAO, NSC, Oakland, Calif.
ED Bu Aero
SPH-2c Master & File

CONTRACT MODIFICATION
NAV. S. AND A. FORM 112 (8PT) (5-56)

Page: 1 of

ISSUED BY:

U. S. NAVY PURCHASING OFFICE
TEMPO "D" BUILDING
4th & INDEPENDENCE AVENUE, S. W.
WASHINGTON 25, D. C.

REQUISITION/PURCHASE AUTH.: EN11-4631-56
CONTRACT/ORDER NO.: N600(A)42125
MODIFICATION NO. AND DATE: 16 28 October 1957
REFERENCE: SPG-1k:RWW:hw

TO:

Be Ge Manufacturing Company
Leavesley Road
Gilroy, California

MODIFICATION AUTHORITY (Check one)

- x "Changes" Clause
- Sec 2c ( ) ASPA 1947
- Within General Scope of the Contract
- CONTRACT CLAUSE ENTITLED
- OTHER

ACCOUNTING CLASSIFICATION

APPROPRIATION AND SUBHEAD	OBJECT CLASS.	EXPENDITURE ACCOUNT	CHARGEABLE ACTIVITY	BUREAU CONTROL ACTIVITY NO.	BUREAU CONTROL NO.	AMOUNT *Indicate decreases by (CR)*
1761502.90						

☑ Pursuant to the "Changes" clause you are hereby directed to make the following change(s):

☐ The above numbered contract is hereby amended, as of the above date, in the following respects only:

The requirement for palletizing is deleted after 500 have been delivered.

Please advise what reduction in price will be offered due to the above change.

All other terms and conditions of the contract remain unchanged.

Copy to:
SPD-1a
SPH-3a
SPF-2a
Insmat, San Francisco, Calif.
BuOrd, Code MA3B-2
BuS&A, H3221, Rm. 1627 Arlex
BuAer, Codes MA-468, MA-3621, MA-3 and CT-432
Dayton T. Brown, 1305 Strong Road, Copiague Long Island, N.Y., c/o Ainsmat
Sperry Gyroscope Co., Great Neck, Long Island, N.Y.
Insord, NS, NAD, Shumaker, Ark
BAR North American Aviation, Columbus, Ohio
BAR El Segundo Div., Douglas Aircraft Corp., El Segundo, Calif.

☐ ACCEPT ☒ ACKNOWLEDGE ☐ NO REPLY REQUIRED

THE UNITED STATES OF AMERICA
By: R.J. De VILBISS Contracting Officer

ACCEPTANCE
Return two (2) signed copies to issuing office. Signature must be that of person authorized to sign for contractor.

ACCEPTED BY *(Signature)* *(Title)*
DATE:

ACKNOWLEDGMENT
Return two (2) properly acknowledged copies to issuing office. Retain signed copy. Signature must be that of person authorized to sign for contractor.

The undersigned hereby acknowledges receipt on _____ 19__, of signed copy of above Change Order.
(Signature) *(Title)*

SPG-1k:RWW:hw
N600(A)42125
Rev. 16

Copy to: (continued)
CO NOTS China Lake, Calif., Code 40135
GAO Audit Div., Cleveland, Ohio
SPG-E (3)
SPG-E for:
NRAO NSC Oakland, Calif.
FD BuAero
SPH-2c Master & File

CONTRACT MODIFICATION
NAV. S. AND A. FORM 112 (SPT) (5-56)

Page 1 of

ISSUED BY:
U. S. NAVY PURCHASING OFFICE
TEMPO "D" BUILDING
4th & INDEPENDENCE AVENUE, S. W.
WASHINGTON 25, D. C.

REQUISITION/PURCHASE AUTH.: NN11-4631-56
CONTRACT/ORDER NO.: N600(A)42125
MODIFICATION NO. AND DATE: 17 29 October 1957
REFERENCE: SPG-1k:RWW:hw

TO:
Be Ge Manufacturing Company
Leavesley Road
Gilroy, California

MODIFICATION AUTHORITY (CHECK ONLY)
- "Changes" Clause
- Sec 2c ( ) ASPA 1947
- [x] Within General Scope of the Contract
- CONTRACT CLAUSE ENTITLED
- OTHER

ACCOUNTING CLASSIFICATION

F.O.B.	APPROPRIATION AND SUBHEAD	OBJECT CLASS.	EXPENDITURE ACCOUNT	CHARGEABLE ACTIVITY	BUREAU CONTROL ACTIVITY NO.	BUREAU CONTROL NO.	AMOUNT *Indicate decreases by (CR)*
	1761502.90						

☐ Pursuant to the "Changes" clause you are hereby directed to make the following change(s):

☒ The above numbered contract is hereby amended, as of the above date, in the following respects only:

Modification Number 14 dated 28 August 1957 is hereby withdrawn in its entirety.

The price and all other terms and conditions of the contract remain unchanged.

Copy to:
SPD-1a
SPF-2a
SPH-3a
Insmat, San Francisco, Calif.
BuOrd, Code MA3B-2
BuS&A, H3221, Rm. 1627, Arlex
BuAer, Codes MA-462, MA-3521, MA-3 and CT-432
Dayton T. Brown, 1305 Strong Road, Copiague Long Island, N.Y., c/o Ainsmat
Sperry Gyroscope Co., Great Neck, L.I., N.Y.
Insord NS NAD Shumaker, Ark.
BAR North American Aviation, Columbus, Ohio
BAR El Segundo Div., Douglas Aircraft Corp., El Segundo, Calif.
CO NOTS China Lake, Calif., Code 40135

SPG-E for:
NRAO NSC Oakland, Calif.
GAO Audit Div., Cleveland, Ohio
FD BuAero
SPH-2c Master & File

☒ ACCEPT ☐ ACKNOWLEDGE ☐ NO REPLY REQUIRED

THE UNITED STATES OF AMERICA
By: GEORGIE S. WADE Contracting Officer

ACCEPTANCE
Return two (2) signed copies to issuing office. Signature must be that of person authorized to sign for contractor.

ACCEPTED BY *(Signature)* *(Title)*
DATE:

ACKNOWLEDGMENT
Return two (2) properly acknowledged copies to issuing office. Retain signed copy. Signature must be that of person authorized to sign for contractor.

The undersigned hereby acknowledges receipt on _____ 19___, of signed copy of above Change Order.
(Signature) *(Title)*

CONTRACT MODIFICATION
NAV. S. AND A. FORM 112 (SPT) (5-56)

Page 1 of

ISSUED BY:	REQUISITION/PURCHASE AUTH.	CONTRACT/ORDER NO.
U. S. NAVY PURCHASING OFFICE TEMPO "D" BUILDING 4th & INDEPENDENCE AVENUE, S. W. WASHINGTON 25, D. C.	EN11-4631-56	N600(A)42125
	MODIFICATION NO. AND DATE: 18 — 1 November 1957	
	REFERENCE: SPG-lj:AFF:hw	

TO:

Be Ge Manufacturing Company
Leavesley Road
Gilroy, California

MODIFICATION AUTHORITY (Check one)

x	"Changes" Clause
	Sec 2c ( ) ASPA 1947
	Within General Scope of the Contract
	CONTRACT CLAUSE ENTITLED
	OTHER

ACCOUNTING CLASSIFICATION

APPROPRIATION AND SUBHEAD	OBJECT CLASS.	EXPENDITURE ACCOUNT	CHARGEABLE ACTIVITY	BUREAU CONTROL ACTIVITY NO.	BUREAU CONTROL NO.	AMOUNT *Indicate decreases by (CR)*
1761502.90						

x Pursuant to the "Changes" clause you are hereby directed to make the following change(s):

☐ The above numbered contract is hereby amended, as of the above date, in the following respects only:

Specification MIL-R-19168(AER) Rocket Launcher Package, Aero 7D and Drawing 54A46C240 are amended to provide for the following:

To Drawing 54A46C240:

The tolerance on the thickness of inner and outer plies of .010 as indicated in the title block of the drawing for .xxx dimensions is permissible.

The maximum ply width is changed to read:
Dia. 3"5 plus .50 minus .75

Dim. .03 plus .00 minus .03 Butt joined is changed to Dim. .05 plus .00 minus .05 for the 24 launchers manufactured under Revision 12.

Dim. 48.00 plus .03 minus .06 is changed to 48.12 plus .03 minus .18 for the 24 launchers manufactured under Revision 12 only.

Delete the phrase "Ends clean cut, no separations of plies". Loose tabs inner and outer plies to extent of 3/4" is permissible only for the 24 launchers manufactured under Revision 12.

☐ ACCEPT ☒ ACKNOWLEDGE ☐ NO REPLY REQUIRED

THE UNITED STATES OF AMERICA
By: GEORGIE S. WADE — Contracting Officer

ACCEPTANCE
Return two (2) signed copies to issuing office. Signature must be that of person authorized to sign for contractor.

ACCEPTED BY *(Signature)* *(Title)*

DATE:

ACKNOWLEDGMENT
Return two (2) properly acknowledged copies to issuing office. Retain signed copy. Signature must be that of person authorized to sign for contractor.

The undersigned hereby acknowledges receipt on _____ 19__, of signed copy of above Change Order.

(Signature) *(Title)*

SPG-1j:APF:hw
N600(A)42125
Rev. 18

To MIL-R-19168:

Paragraph 3.3.4.2.1 Acetone Extraction: 30 percent maximum. This waiver is applicable only for the 24 launchers manufactured under Revision 12.

Paragraph 3.3.4.2.2 Waived to permit a maximum of 50 percent water absorption.

Paragraph 3.3.4.2.5 Waived to read "15 volts per mil".

Paragraph 4.3.4.4 This paragraph is hereby waived.

It is requested that you advise this office what reduction in the contract price will be offered due to the granting of the above waivers relaxing the requirements of the contract.

All other terms and conditions of the contract remain unchanged.

Copy to:
SPD-1a
SPH-3a
SPF-2a
Insmat, San Francisco, Calif.
BuOrd, Code MA3B-2
BuSandA, H3221, Rm. 1627 Arlex
BuAer, Codes MA-462, MA-3621, MA-3 and CT-432
Dayton T. Brown, 1305 Strong Rd., Copiague Long Is., N.Y., c/o Ainsmat Sperry Gyroscope Co., Great Neck, L.I., N.Y.

Insord NS NAD Shumaker, Ark.
BAR North American Aviation, Columbus, Ohio
BAR, El Segundo Div., Douglas Aircraft Corp., El Segundo, Calif.
CO NOTS China Lake, Calif., Code 40135
GAO Audit Div., Cleveland, Ohio
SPG-1j (HOLD)
SPG-E for:
NRAO NSC Oakland, Calif.
FD BuAero
SPH-2c Master & File

CONTRACT MODIFICATION
NAV. S. AND A. FORM 112 (SPT) (5-56)

Page 1 of

ISSUED BY:
U. S. NAVY PURCHASING OFFICE
TEMPO "D" BUILDING
4th & INDEPENDENCE AVENUE, S. W.
WASHINGTON 25, D. C.

REQUISITION/PURCHASE AUTH.: EN11-4631-56
CONTRACT/ORDER NO.: N600(A)42125
MODIFICATION NO. AND DATE: 19 20 November 1957
REFERENCE: SPG-lk:RWW:hw

TO:
Be Ge Manufacturing Company
Leavesley Road
Gilroy, California

MODIFICATION AUTHORITY (Check one)
- x "Changes" Clause
- Sec 2c ( ) ASPA 1947
- Within General Scope of the Contract
- CONTRACT CLAUSE ENTITLED
- OTHER

ACCOUNTING CLASSIFICATION

APPROPRIATION AND SUBHEAD	OBJECT CLASS.	EXPENDITURE ACCOUNT	CHANGEABLE ACTIVITY	BUREAU CONTROL ACTIVITY NO.	BUREAU CONTROL NO.	AMOUNT *Indicate decreases by (CR)*
1761502.90						

☒ Pursuant to the "Changes" clause you are hereby directed to make the following change(s):

☐ The above numbered contract is hereby amended, as of the above date, in the following respects only:

The second paragraph of Modification Number 12 dated 5 August 1957 is changed to read as follows:

"Upon completion of the above launchers ship 18 each to Dayton T. Brown, Inc. 1305 Strong Road, Copiague, Long Island, New York, c/o Ainsmat Sperry Gyroscope Co., Great Neck, Long Island, New York and 6 each to Commanding Officer, Naval Ordnance Test Station, Inyokern, China Lake, California".

The price and all other terms and conditions of the contract remain unchanged.

Copy to:
SPF-2a
SPH-3a
SPD-1a
Insmat, San Fran., Calif.
BuOrd, Code MA3B-2
BUSANDA, H3221, Rm. 1627 Arlex
BuAer, Codes MA-468, MA-3621, MA-3 and CT-432
Dayton, T. Brown, 1305 Strong Rd., Copiague Long Is., N.Y. c/o Ainsmat Sperry Gyroscope Co., Great Neck, Long Is., N.Y.

☐ ACCEPT ☒ ACKNOWLEDGE ☐ NO REPLY REQUIRED

THE UNITED STATES OF AMERICA
By: R.J. DeVILBISS Contracting Officer

ACCEPTANCE
Return two (2) signed copies to issuing office. Signature must be that of person authorized to sign for contractor.

ACCEPTED BY *(Signature)* *(Title)*
DATE:

ACKNOWLEDGMENT
Return two (2) properly acknowledged copies to issuing office. Retain signed copy. Signature must be that of person authorized to sign for contractor.

The undersigned hereby acknowledges receipt on ____ 19__, of signed copy of above Change Order.
(Signature) *(Title)*

SPG-1k:RWW:hw
N600(A)42125
Rev. 19

Insord, NS NAD, Shumaker, Ark
BAR North American Aviation, Columbus, Ohio
BAR El Segundo Div., Douglas Aircraft Corp., El Segundo, Calif.
CO NOTS China Lake, Calif., Code 40135
GAO Audit Div., Cleveland, Ohio
SPG-E (3)
SPG-E for:
NRAO NSC Oakland, Calif.
FD BuAero
SPH-2c Master & File

CONTRACT MODIFICATION
NAV. S. AND A. FORM 111 (SPT) (3-55)

Page 1 of 2

ISSUED BY:	REQUISITION/PURCHASE AUTH.	CONTRACT/ORDER NO.
U. S. NAVY PURCHASING OFFICE TEMPO "D" BUILDING 4th & INDEPENDENCE AVENUE, S. W. WASHINGTON 25, D. C.	NN11-4631-56	N600(A)42125
	MODIFICATION NO. AND DATE 20	2 May 1958
	REFERENCE SPO-1k:RM:tw	

TO:

Be Ge Manufacturing Company
Leavesley Road
Gilroy, California

MODIFICATION AUTHORITY (Check one)

- "Changes" Clause
- 10 U.S.C. 2304(a)( )
- [X] Within General Scope of the Contract
- CONTRACT CLAUSE ENTITLED
- OTHER

ACCOUNTING CLASSIFICATION

APPROPRIATION AND SUBHEAD	OBJECT CLASS.	EXPENDITURE ACCOUNT	CHARGEABLE ACTIVITY	BUREAU CONTROL ACTIVITY NO.	BUREAU CONTROL NO.	AMOUNT Indicate decreases by (CR)
1761502.90						

☐ Pursuant to the "Changes" clause you are hereby directed to make the following change(s):

☒ The above numbered contract is hereby amended, as of the above date, in the following respects only:

Provide for the delivery of the following quantities of Launchers to the destinations indicated which have not been covered by Modification to contract:

Destination	Quantity
Dayton T. Brown, Inc. 1305 Strong Road Copiague, Long Island	3
Receiving Officer Naval Ordnance Test Station Inyokern, China Lake, California	17
Receiving Officer Naval Auxilliary Air Station El Centro, California	50

COPIES TO:

☐ ACCEPT ☐ ACKNOWLEDGE [X] NO REPLY REQUIRED

THE UNITED STATES OF AMERICA

By: , Contracting Officer

ACCEPTANCE
Return two (2) signed copies to issuing office. Signature must be that of person authorized to sign for contractor.

ACCEPTED BY (Signature) (Title)

ACKNOWLEDGMENT
Return two (2) properly acknowledged copies to issuing office. Retain signed copy. Signature must be that of person authorized to sign for contractor.

The undersigned hereby acknowledges receipt on 19 of signed copy of above Change Order.
(Signature) (Title)

SPG-1k:RMW:tvw
N600(A)42125
Mod. No. 20
2 May 1958

Destination	Quantity
Commanding Officer Air Force Proving Ground Eglin Air Force Base, Florida	50

The price and all other terms and conditions of the contract remain unchanged.

Copy to:
SPF-2a
SPH-3a
SPD-1a
INM San Francisco, California
BuOrd, Code MA3B-2
BUSANDA, H3221, Rm. 1627 Arlex
BuAer, Codes MA-468, MA-3621, MA-3 and CT-432
Dayton T. Brown, 1305 Strong Road, Copiague Long Island, N. Y. c/o AINM Sperry Gyroscope Co., Great Neck, Long Island, N. Y.
INSORD, NS NAD, Shumaker, Ark.
BAR North American Aviation, Columbus, Ohio
BAR El Segundo Div., Douglas Aircraft Corp., El Segundo, Calif.
CO NOTS, China Lake, Calif.
GAO Audit Div., Cleveland, Ohio
CO, NAAS, El Centro, Calif.
CO, Air Force Proving Ground, Eglin AFB, Florida
SPF-2a for:
NRAO NSC Oakland, Calif.
FD BuAero
SPH-2c Master & File

Question 2: Cite the dates on which the contractor was notified by the contracting officer or other Navy representatives that he was in a state of delinquency on the contract. Were any notices of possible default proceedings given in any of these instances?

Answer: The contractor was advised of his delinquency by a letter from the inspector of naval material, San Francisco, dated June 19, 1957. (See 1957 hearings, p. 597.) He was further advised, orally, during negotiation meetings on December 5, 1957, and June 9, 1958. He has never been given a written notice on possible termination for default.

Question 3: Describe briefly the waivers in laboratory and field testing of production quantity rocket launchers delivered by the contractor, and identify which waivers were due to urgent delivery demands by field or fleet activities.

Answer: A high level of confidence has been built up in the quality of the contractor's production with the result that it was decided to reduce the amount of environmental testing. Commencing with lot No. 17, the following tests have been deleted on 3 of every 4 production lots.

4.5.1.7.1 high-temperature test
4.5.1.7.2 low-temperature test
4.5.1.7.3 salt-spray test
4.5.1.7.11 vibration test

i. e., every fourth production lot received the complete test syllabus.

Acceptance of lot No. 2 was based upon the successful performance of launchers in firing tests at NOTS. Environmental testing was waived because of the urgent requirement for launchers for scheduled Navy and USAF programs.

Lot No. 2 consisted of 103 launchers. These launchers were employed as follows:

To NOTS China Lake, Feb. 26, 1957	12
To NOTS China Lake, Mar. 22, 1957	5
To FAGU, NAAS El Centro, Mar. 22, 1957	50
To USAF, AFAC, Eglin Air Force Base, Apr. 3 1957	36
Total	103

Question 4: Identify the launcher lots rejected in laboratory and field testing, citing dates tested, the reasons for rejection, and dates retested and approved.

Answer:

Rejected lots	Date rejected	Reason	Date retested and approved
35	Sept. 20, 1957	Bulkhead failure	Oct. 3, 1957
37	Sept. 25, 1957	do	Oct. 22, 1957
57	do	do	Dec. 4, 1957
81	Feb. 15, 1958	do	Feb. 27, 1958
119	May 23, 1958	Fairing deficiency	June 19, 1958
120	do	do	Do.
121	do	do	Do.
124	do	do	Do.

Question 5: On the basis of sample tests of production launchers to date, give a frequency distribution of the major defects that may be expected in these production launchers, including rocket-firing failures and tube ruptures.

Answer: Four major defects have been experienced (aft bulkhead blowing off) in testing. Based on the number of lots tested and the number of samples tested per lot, a process average is obtained of 1 percent. If this process average is maintained, it can be anticipated that approximately 10 additional major defects will be experienced in tests when sampling for testing employing an inspection level, L6 and acceptable quality level of 4 percent (MIL STD 105) as currently required by the contract.

Eleven rockets have failed to fire from the samples tested at NAD Shumaker, a process average of 0.146 percent.

Under the same statistical basis as above, it can be anticipated that a total of approximately 26 rockets will fail to fire from the launchers to be tested.

According to the specification MIL–R–19168 paragraph 4.5.2.1 Ground Firing Tests: "* * * the launcher package must remain intact on the pylon and sustain no damage except peeling and darkening of the exposed surfaces, minor tube ruptures, and bending or breaking of the ground contact of the rear bulkhead.

NAD Shumaker, in its telegram, reporting results of tests, would provide amplifying information to assist the BuAer in determining that tube-quality control was being maintained. This amplifying information consists of comments such as "Tube 1A cracked; minor crack in the tube 4A; small holes in tube 6A; minor rupture in tubes 4B and 6B; etc." These descriptive remarks all come under the category of "minor tube ruptures" and are not disqualifying. It is expected that every launcher fired will experience some degree of this minor tube damage which in no way adversely affects launcher performance or safety of flight.

Question 7: Estimate the costs incurred by the Navy in investigating and testing alternate tube sources and materials for possible use in the production of 19-round expendable rocket launchers.

Answer: The following information which has been obtained by telephone from the naval ordnance test station is submitted:

Out-of-pocket expenditures by NOTS:

General tube tests and preparation of reports, $1,554.

Cutting and preparing test samples, $272.

Testing six launchers incorporating Globe tubes, $1,503.

Included in this cost is the testing of 3 tubes made by Be Ge Corp. and 3 tubes made by Taylor Co.

DEPARTMENT OF THE NAVY,
BUREAU OF AERONAUTICS,
Washington, D. C., August 1, 1958.

Hon. CHET HOLIFIELD,
Chairman, Military Operations Subcommittee,
Government Operations Committee,
House of Representatives, Washington 25, D. C.

MY DEAR MR. CHAIRMAN: In response to an oral request by Mr. Earl Morgan of your staff I am pleased to enclose a listing of production delays encountered to date during the performance of contract N600(A)42125 by the Be Ge Manufacturing Co., Gilroy, Calif.

Sincerely,

R. E. DIXON,
Rear Admiral, USN,
Chief of the Bureau of Aeronautics.

Production delays during performance of contract N600(A)42125

June 11, 1957	To correct shock pans.
June 14, 1957	Do.
June 21, 1957	Rework of adapter rings.
June 24, 1957	Do.
July 1–14, 1957	Lack of tubes.
Aug. 7, 1957	Do.
Oct. 31, 1957	Do.
Nov. 25–29, 1957	Tubes received not to specifications.
Dec. 23, 1957	Lack of tubes.
Dec. 30, 1957	Do.
Dec. 31, 1957	Do.
Jan. 6–9, 1958	Tubes received not to specification.
Jan. 27, 1958	Lack of tubes.
Jan. 28, 1958	Do.
Apr. 3, 1958	Flood conditions.
May 2–12, 1958	To coordinate testing of Be Ge Globe tubes.

AIR FORCE AND NAVY ROCKET-LAUNCHER PROGRAM

(Part 2)

TUESDAY, JULY 15, 1958

HOUSE OF REPRESENTATIVES,
MILITARY OPERATIONS SUBCOMMITTEE,
OF THE COMMITTEE ON GOVERNMENT OPERATIONS,
Washington, D. C.

The subcommittee met, pursuant to recess, at 10 a. m., in the hearing room, George Washington Inn, Hon. Chet Holifield (chairman of the subcommittee) presiding.

Present: Representatives Holifield, Fascell, Riehlman, and Lipscomb.

Also present: Herbert Roback, staff administrator; Earl Morgan, chief investigator; and Paul Ridgely and Robert McElroy, of the subcommittee staff.

Mr. HOLIFIELD (presiding). The subcommittee will be in order.

We have before us this morning the Air Force witnesses. We are continuing our longstanding investigation on the Air Force and Navy rocket-launcher procurement program and hope that by the testimony we will receive today, we will be able to complete this phase of the committee's operations; and, before the adjournment of Congress, bring forth a report on this matter.

General Thurman, we are glad to have you before us again, and I see you have a prepared statement.

Would you wish to proceed with it?

STATEMENT OF MAJ. GEN. WILLIAM T. THURMAN, UNITED STATES AIR FORCE; ACCOMPANIED BY COL. JAN M. LAITOS, APGC; MAJ. WILLIAM H. BRASSFIELD, DIRECTORATE OF DEVELOPMENT, APGC; LT. L. D. GSCHWING, DIRECTORATE OF DEVELOPMENT, APGC; OLAN W. PROSSER, CONTRACTING OFFICER, ST. LOUIS APD; JOHN GIBBS, CONTRACTING OFFICER, AMC; AND C. L. BONKOFSKY, CHIEF, AMMUNITION AND WEAPONS SECTION, PROGRAMS AND REQUIREMENTS DIVISION, DIRECTORATE OF SUPPLY, HEADQUARTERS, AIR MATERIEL COMMAND, WRIGHT-PATTERSON AIR FORCE BASE, DAYTON, OHIO

General THURMAN. Mr. Chairman, and members of the committee, I am here in response to your letter requesting that the Air Force appear and review with the committee the events that have transpired in the procurement of rocket launchers since the hearings of last year.

You will recall that last year we advised you of our proposal to procure the LAU–3/A 19-round rocket launchers in place of the MA–3 7-round launchers, and that, at the time of hearing, a formally advertised procurement was underway.

I would like at this time to review with you that procurement in general and respond to the questions that have been raised informally by your staff members.

Some of these questions deal with buying and contract administration and some with testing and engineering decisions. The latter will be covered in a statement to be made by Col. Jan M. Laitos, on my right, who is representing the Air Proving Ground Center.

Present today are other Air Force personnel, who participated in this procurement and who can answer specific questions you may have.

On March 13, 1957, an invitation for bid was issued calling for a quantity of 43,750 type LAU–3/A rocket launchers, with the opening date established as April 12, 1957.

Due to drawing changes and a reduction in quantity from 43,750 to 34,000, amendments to the invitation for bid were issued and the final date for opening was extended to May 10, 1957.

The bids were opened on that date and, of the 31 bids received, the bid by the Chromecraft Corp. in the amount of $3,887,800 ($114.30 per unit) was low.

The buyer requested and received a facility capability report which indicated that the contractor was qualified and responsible.

However, during the survey, it was discovered that the contractor, in computing its costs on the reduced quantity, had failed to increase the cost of amortizing its tooling over the smaller number of end items.

At that time Chromcraft alleged it had made a mistake in the bid and asked for an increase in unit price of $1.38, which would bring the total unit price to $115.68, but still leave Chromcraft the low bidder.

In accordance with established procedures, the allegation of error and supporting evidence were forwarded for administrative and legal determination.

The determination of the Judge Advocate General's Office and policy personnel was that correction of the mistake should be allowed.

The contract was awarded at the corrected price on June 29, 1957.

The contract provided, among other things, for the furnishing of 260 preproduction samples within 150 days after receipt of notice of award. It further provided that, within 75 days of receipt by the Government of the preproduction samples and related test reports, the Government would notify the contractor in writing of its approval or disapproval of the samples.

Since the award of the contract there have been three amendments issued.

The first amendment issued as supplemental agreement No. 2 corrected a dimensional error on the drawings and involved a cost of $8,629.20 to rework tooling that had been fabricated to the old dimension. It also extended the delivery date of the preproduction samples by 55 days.

The second amendment issued as supplemental agreement No. 3 revised the standard shipment clause and did not involve a change in contract price.

The third amendment issued as supplemental agreement No. 5 incorporated some 35 drawing changes and involved an overall decrease in contract price of $11,607.60.

Supplemental agreements Nos. 2 and 5 are the only ones to date affecting price. Their combined effect is a reduction of 9 cents per unit. The present unit price, exclusive of termination and any other adjustments that may be involved, is $115.59.

On January 14 of this year the First National Bank of St. Louis requested a 75 percent guaranty on a $600,000 loan for Chromcraft. The Air Force declined to approve the request.

By January 23, 1958, which was the extended schedule date, Chromcraft had delivered the required 260 preproduction samples along with required test reports from the Lambert Engineering Co. in St. Louis.

Colonel Laitos will cover the testing done by the Air Force and the detailed results which led to the disapproval of the samples.

The Air Materiel Command was advised by the Air Proving Ground Center at Eglin that, although the launchers were not acceptable, it would be advisable to obtain additional samples with Sonoco tubes and specified engineering changes for further testing.

Temporary engineering fixes were incorporated on 10 additional launchers which were subsequently furnished and ground tested.

The results of these tests were favorable, and Eglin requested 50 additional units, incorporating the changes made on the 10 units which had been tested.

A determination as to whether the Air Force or the contractor will bear the cost of increased testing has not as yet been made.

Chromcraft contents that it has complied with the specifications and drawings on the 260 preproduction samples.

Our engineers disagree and have not approved the launcher for production. The Air Force engineers do believe, however, that Chromcraft's product is close enough to our requirements to warrant continued testing.

In evaluating whether or not to proceed with the contract and to obtain the additional samples, I considered the fact that the Air Force needs rocket launchers and that our engineers feel that there is a good possibility that with the changes proposed, the launcher will be acceptable. I made the decision to obtain the samples and attempt to get an approved launcher from this contract rather than incur the time and expense of a new procurement.

Negotiations were commenced with Chromcraft for the additional 50 units for flight test purposes, and on June 10, 1958, the contractor was authorized by letter to fabricate these units on or before August 25, 1958.

The letter provided that in the event approval for production is not subsequently granted, the Government agrees without prejudice to any of its rights with respect to termination, to reimburse the contractor at a unit price of $153.60 plus $8,660 for tooling charges.

This brings up to date the progres of this procurement with the exception of a review of the partial termination.

In the early part of 1958, revised Air Force programing reduced the requirement of the LAU–3/A Launcher to 20,767.

After the review of the economic feasibility of termination, a notice to the contractor of termination of 13,233 units was issued on March 11, 1958.

While negotiations are not complete on the termination action, it has progressed to the point where we are optimistic that the cost will be much less than had previously been given to the committee staff members. There are many indications that the contractor has been able to setttle its subcontract claims and control production releases in a manner more efficient than originally contemplated.

This concludes my review of the buying and contract administration aspects of this procurement.

I recognize that it has been very brief, particularly in light of the considerable knowledge this committtee has on Air Force rocket launcher procurement. It might be well, however, before reviewing details that Colonel Laitos present his statement on the engineering and testing aspects.

Mr. HOLIFIELD. Unless there is objection, we will go ahead with Colonel Laitos and then we will have the questioning period.

Colonel LAITOS. Mr. Chairman, and members of the committee; this statement is a summarization of the significant events that have occurred from an engineering standpoint during the period from the last committee hearing to the present time.

Delivery of the 260 preproduction samples to APGC—and I would like to announce at this time that you will see these initials APGC throughout the statement and they refer to the Air Proving Ground Center—delivery was accomplished between December 2, 1957, and January 23, 1958.

Both ground and air tests were conducted during the period December 12, 1957, to April 8, 1958, which comprised 22 ground firings and 38 air firings for a total of 60 launchers.

Major tube damage experienced during ground and air firing tests, coupled with the loss of one rear bulkhead in the air, led to disapproval of the preproduction samples, based on failure to meet performance requirements.

AMC was informed by letter dated April 4, 1958, and the AMC commander and staff was briefed to this effect on April 14, 1958. The final report on results of preproduction tests were published in June by Air Proving Ground Center.

Although the preproduction samples were not approved for further production, it was apparent that the configuration was close to being an acceptable item. The quickest and most economical way to satisfy the need for a launcher was to establish necessary fixes so that the launcher would be acceptable.

On April 14, 1958, AMC notified the contractor of nonacceptance of preproduction articles and suggested that the contractor meet with APGC to discuss the test results and possible corrective measures.

Consequently, a technical meeting was held at APGC on April 17, 1958, with representatives of AMC, the contractor, the Navy, and APGC to determine what could be done to obtain an approved launcher.

All agencies involved were briefed thoroughly on the deficiencies of the launcher at that time, and a deficiency test program at Air Proving Ground Center was outlined to determine fixes in an attempt to bring the launcher up to performance requirements.

The deficiency test program began April 25, 1958, and was completed July 7, 1958.

During the course of the test, 32 launchers were ground fired. Of these, some 10 were additional launchers modified and furnished by the contractor.

The remaining 22 were from the original preproduction lot and were fired to test APGC modifications.

Modifications by APGC consisted of lugs attached to the rear retaining ring in an attempt to assure integrity of the launcher and the bulkhead.

Although the modifications performed by the APGC were not entirely successful, sufficient information was derived from the test to provide inputs to the contractor so that a successful modification could be made.

The additional 10 launchers were modified by the contractor with lugs having a larger bearing surface, and also additional and longer wood filler strips were included to provide support to all tubes.

These 10 launchers were successfully ground-tested at APGC. Subsequent to this test, some 61 additional preproduction launchers modified by APGC with lugs furnished by the contractor were successfully air fired, confirming the bulkhead fix.

During the period of testing, that is, from December 12, 1957, through April 8, 1958, of the preproduction samples, 22 ground and 38 in the air, it became apparent that a compatibility problem existed with the LAU–3/A and F–100 aircraft.

The frequency and extent of damage to the control surfaces of the aircraft was significantly greater than had been experienced during testing of the Aero 7D by Air Proving Ground Center.

Damage was caused by rocket hardware, such as nozzle caps, fin retainers, and igniter wire, that is blasted to the rear when the rockets are launched.

This problem was a byproduct of the test and was not a factor in rejection of the preproduction samples.

In an effort to reduce or eliminate the damage incurred by F–100 aircraft when firing LAU–3/A launchers, an additional test was initiated by APGC on May 12, 1958.

This test is continuing and to date 61 preproduction modified launchers referred to in an earlier paragraph, have been air fired.

Modifications were made to assure bulkhead retention with five lugs, but did not have the wood filler strips included.

Forty-two of the launchers had the ground contacts made of softer metal and reoriented.

Results indicated that the soft ground contact does reduce rocket damage and that the present stiff or hardened grounding contacts and/or their orientation are causing a large part of the damage inflicted on the aircraft control surfaces. The soft ground contact is being investigated further, and any proposed change in these contacts will be coordinated with the Navy prior to release of a change in drawings or the specifications.

Following up the launcher deficiency and compatibility test, members of the APGC met with the representatives of the Air Materiel Command on May 28, 1958, to report on latest results and consider possible procurement of additional launcher samples.

At this meeting it was agreed that Air Materiel Command would obtain 50 additional launchers from the production contractor for

the purpose of testing and proving effectiveness of the established "fixes" on launchers manufactured under production conditions.

Changes in the 50 launchers will consist of:

Sonoco tubes.

Additional and extended wood filler strips to support tubes in the rear section of the launcher.

Bulkhead modification to include five retaining lugs.

Hex head screws to attach grounding contacts to the bulkhead.

Annealed, two and one-finger contacts, oriented in a downward direction, to reduce aircraft damage from rocket debris.

We feel that these things in these 50 launchers should result in a launcher configuration satisfactory in both performance and compatibility.

These 50 launchers are scheduled for delivery by August 25, 1958.

Three weeks will be required subsequent to August 25, 1958, to conduct tests at APGC to determine acceptability.

Throughout this procurement program, continuous liaison has been maintained with Navy development agencies to assure mutually acceptable performance standards.

This concludes my prepared statement.

Mr. HOLIFIELD. Thank you, Colonel Laitos.

Colonel LAITOS. Mr. Chairman, if I may, and if you so desire, I will cover certain of the hardware items we have behind you there, some of the hardware which is referred to in my prepared statement, and if you would like, we would be glad to briefly give some explanation to the committee as to how the launcher works.

Mr. HOLIFIELD. Just a short one of a couple of minutes.

Colonel LAITOS. This is an LAU–3A launcher.

This is the rear end of the launcher, and that is the forward end. It has 19 tubes. This is a cross-section sample of the tube.

The rocket is loaded from the front end this way. Here is the tail of the rocket, with the fins, and in between the warhead and the fins of the rocket there is the rocket motor with the propellent.

This fits in this position back here on the launcher.

We have what is called a decal which fits in here. The rocket fits in this manner and gets its electrical contact which goes on back through here. These contacts, called ground contacts, fit on this way.

This is the ground. When a pilot depresses the trigger, the electricity or the impulse goes through there and through the contact and fires the rocket. This is the ground contact that we refer to.

This is an intervalometer which fits back in here which permits the rockets to be fired in a ripple condition, which means they go out two at a time from the front end; the two rockets come out at the same time. There is a second where we have a salvo and all of the rockets come out at the same time. There is the place for the intervalometer and some other equipment.

This is the bulkhead. I have referred to the bulkhead which fits back here, it actually came off in flight and hit the surface of the aircraft. I mentioned rocket debris damage. It comes out back here. When the rocket is fired it goes forward and what is discharged are these nozzle caps (4 per rocket), fin retainer cap, and a lot of wire.

These are the caps which come back and hit the surfaces of the aircraft.

When we say the ground contact should be oriented or reoriented, we say that when the rocket debris comes back it hits this particular contact finger with the result that it is bent back and the debris is deflected upward to where the control surfaces of the aircraft are, thus hitting the ailerons. We are recommending that some of these be like this [holding up sample], with a softer metal and something here so that when the blast and rocket debris come back to force this contact finger in this manner, thus all the rocket debris will be deflected downward or away from the control surfaces of the aircraft.

Now, the byproducts, which we refer to as the five lugs, are positioned in this manner on the bulkhead. We did not lose a single bulkhead; however, we did have occasions where the bulkhead or retainer ring bulged, proving to us that if we had not had the lugs, we would have lost another bulkhead, which may damage the aircraft.

These are the wood filler strips that I referred to. They go in right here in this position. We ran some tests and I have some pictures if you desire to look at them. We observed quite extensive tube damage in this area and we ripped the skin off of this launcher and found out that there was a certain amount of void or space between the tubes in the fitting together, so we jointly agreed, the contractor and us, that a fix should be made to lengthen the strips, thus supporting the tubes completely at the rear. This will give adequate tube support if the rockets are fired in a salvo. This occurs occasionally. Additional filler strips are added here where there is maximum gas pressure.

Mr. ROBACK. Are those strips——

Colonel LAITOS. They have nothing to do with the outside dimensions.

Mr. HOLIFIELD. Those extend for just a short distance.

Colonel LAITOS. Yes, sir.

Mr. HOLIFIELD. And the others go on.

Colonel LAITOS. Right.

Mr. EARL MORGAN. How much weight does that add?

Colonel LAITOS. How much weight does it add, Lieutenant Gschwing?

Lieutenant GSCHWING. We never figured out what it is.

Mr. EARL MORGAN. What sort of wood is it?

Colonel LAITOS. Spruce.

We have the filler up to about this portion, which is about three-quarters of the launcher length.

Here is a bulkhead which fits on here.

The tube of course fits thusly.

You have another tube which fits here and these voids are filled with the wood filler strips.

Mr. HOLIFIELD. I notice it uses the Sonoco tubes.

Colonel LAITOS. Yes, sir.

Mr. HOLIFIELD. Is that a different tube from the Cleveland Container tube?

Colonel LAITOS. Lieutenant, is the Cleveland Container tube different from the Sonoco?

Lieutenant GSCHWING. They are different. The Cleveland tube is a harder, more brittle tube; Sonoco tube is a softer, more flexible tube.

Mr. HOLIFIELD. Who makes the Sonoco tube?

Lieutenant GSCHWING. Sonoco Manufacturing Co. I believe is the name of the outfit.

Mr. ROBACK. Where is that company located?

Lieutenant GSCHWING. North Carolina.

Mr. ROBACK. North Carolina?

Lieutenant GSCHWING. Yes, sir.

Mr. ROBACK. There are several similar names, and we wanted to avoid any confusion. That is not the tube that is sometimes referred to as that of the Sun Oil Co., or Sunoco?

Lieutenant GSCHWING. That is correct.

Mr. EARL MORGAN. Is that Sonoco Products of Hartsville, S. C.? You said North Carolina.

Lieutenant GSCHWING. I believe it is North Carolina, I am not sure.

Mr. HOLIFIELD. Off the record.

(Discussion off the record.)

Mr. HOLIFIELD. Back on the record.

Mr. Roback will have a few questions.

Mr. ROBACK. General Thurman, on page 1 of your statement, you say the buyer requested—does that refer to the Air Force buyer—that a financial and capability report be made?

General THURMAN. Yes.

Mr. ROBACK. That was made in due course?

General THURMAN. It is a routine check of procurements over $25,000.

Mr. ROBACK. Now, on page 2 you referred to the incorporation in supplemental agreement 5 of 35 drawing changes.

Now, are those changes which were also made by the Navy, or are those particular changes made in the course of the Air Force testing and examination?

General THURMAN. May I ask Colonel Laitos to answer that?

Colonel LAITOS. All those 35 changes were received by us from the Navy. We reviewed them and submitted them to Headquarters, AMC.

Mr. ROBACK. At the time you went into an advertised procurement, you were already the beneficiary of some recommended changes by the Navy?

General THURMAN. Correct.

Mr. ROBACK. So that you started off at a point where, after the Navy had incorporated or agreed to incorporate some hundred plus changes——

General THURMAN. That is correct.

Mr. ROBACK. So that these 35 represent some changes in the course of Navy modification of their drawings, some changes that the Navy recommended.

Now, did Air Force have any of its own recommended changes?

Colonel LAITOS. To my knowledge, none, sir and I think it might clarify things by saying that the 35 changes were all recommended prior to the preproduction samples being delivered.

Mr. ROBACK. After these samples were delivered by the contractor, you would have some changes, would you not? You recommended various changes in drawings. What about all these?

General THURMAN. That is correct.

Mr. ROBACK. Have they been incorporated either in the contract or in the drawings or in the specifications, or are those simply under consideration at this time, the things that you talked about?

General THURMAN. They are in the latter category, under consideration at the time.

I am correct am I not, Colonel Laitos?

Colonel LAITOS. Yes, sir.

Mr. ROBACK. Now, at the time the Air Force decided to buy the LAU/3A, some modifications were made in the Navy version to suit Air Force requirements.

The question is, Did those changes in turn become incorporated in the Navy version? One of them had to do with the failure of the nosefairing at certain Air Force aircraft speeds? Now, do you have a nosefairing on the LAU/3A which is different from the Aero 7D?

General THURMAN. Colonel Laitos.

Colonel LAITOS. Yes, we have a different nosefairing because of the different speed we would be operating at, we needed a stronger fairing which we obtained, and we also made a change in our launcher. We call it the hardback, that metal behind you there sir.

Here sir, that extends all the way back on the top of the launcher. This was extended from just where he has his finger there. Everything else is identical to the Navy, except that.

Mr. ROBACK. Is that for sway bracing?

Colonel LAITOS. Yes.

Mr. ROBACK. If the Air Force had an emergency in which it needed 19-round launchers, and it didn't have any produced yet, could it take those Navy Aero 7D launchers, mount them and then fire them?

Colonel LAITOS. Yes.

Mr. ROBACK. I want to be careful, and I want a careful answer to this question, because if you were flying these 100 series aircraft, the nosefairings would give trouble, according to your own testimony. I mean you could fit these in, but they would not necessarily be satisfactory for firing purposes, is that right?

Colonel LAITOS. If we were forced to fly with the Navy launcher, with the Navy fairing, we would probably have to reduce our speed limits to take care of those nosefairing pressure problems.

Mr. ROBACK. You would be flying without a nosefairing aerodynamically correct for your speed. If it crushed, you would be flying with a flat explosed surface on the launcher, isn't that the way it is?

Colonel LAITOS. That would be the case, or if we flew with the Navy nosefairing it would crush up under the speed we fly normally, and cause a damage to the aircraft and maybe other situations.

Mr. ROBACK. So that insofar as there is interservice compatibility, as testified earlier, it has to do with the ability to suspend these launchers from aircraft, rather than as to whether they are satisfactory for the required Air Force performance; isn't that a fair statement?

Colonel LAITOS. That would be in my opinion; yes.

Mr. ROBACK. Now, there were some other variations in specifications. For example, does the Air Force specification call for salt-spray tests?

Colonel LAITOS. May I ask Lieutenant Gschwing to answer that?

Lieutenant GSCHWING. Yes, it does.

Mr. ROBACK. Why does it; is that because the Navy requires it, or because you also have a salt-spray test requirement?

Lieutenant GSCHWING. I believe that it is a little of both.

Mr. ROBACK. What bearing would that have, that salt-spray test, with Air Force equipment?

Lieutenant GSCHWING. This is to be interchangeable with Navy items.

Mr. ROBACK. But not necessarily because you would want it yourself?

Lieutenant GSCHWING. Well, the Air Force also has this requirement, itself.

Mr. ROBACK. Where does it have it; is that just because the aircraft flies close to the ocean?

Lieutenant SCHWING. Well, it applies to storage conditions, on board ship, transportation and storage on islands.

Mr. EARL MORGAN. General Thurman, was the facility capability report a desk survey, or was it an actual survey made of the Chromcraft facility prior to the award of the contract?

General THURMAN. It was an actual survey.

Mr. Prosser, would you care to elaborate on that?

Mr. PROSSER. It was an actually conducted survey in which we spent a week in reviewing the contractors' proposals, capabilities, quality-control ability, financial ability.

Mr. EARL MORGAN. That included the financial capability survey?

Mr. PROSSER. It did; yes, sir.

Mr. ROBACK. Did you relate that to a request for a loan made subsequently? Was that question raised in the financial survey?

Mr. PROSSER. No, sir. There is no question of need for additional financing, or was, at the time. The request was to come much later.

Mr. EARL MORGAN. It was only about 6 or 7 months after the award of the contract, was it not?

Mr. PROSSER. Yes; it was about 6 months.

Mr. EARL MORGAN. What was the stated purpose of the loan?

Mr. PROSSER. The purpose of the loan, as I understand from Mr. Stone, was a decision made by their board of directors that they would like to augment their financing with a Government loan, a Government-supported loan; but his expression to me was that it was not entirely mandatory as, in his particular opinion, in the board of directors meeting, it was not necessary.

Mr. EARL MORGAN. It was not necessitated by the delay on this contract?

Mr. PROSSER. I think they anticipated delay; it might have been one of the reasons; they didn't express it as that.

Mr. EARL MORGAN. What was the reason for the Air Force declining to approve the request?

Mr. PROSSER. It was stated that it was tax litigation against this company which they felt jeopardized things.

Mr. ROBACK. Jeopardized the loan?

Mr. PROSSER. The loan.

Mr. ROBACK. Otherwise you might have approved the loan?

Mr. PROSSER. Yes, sir. As far as we were concerned, we recommended it at our level and a certificate of eligibility was issued by Headquarters, AMC; the disapproval was given otherwise.

Mr. ROBACK. Referring to page 3, with regard to the decision or the question as to who would bear the cost of increased testing, that at this time has not been determined, in view of the fact that you have ordered additional preproduction samples and agreed to pay a designated amount for those samples, have you not in effect made a decision that it changes the specifications or that the contractor has conformed to the previous specifications?

General THURMAN. No, sir, I don't think so. We were in something of a spot with respect to this, as I think you can appreciate. The Air Force is of the opinion that the preproduction article did not conform to specifications and that this clause in the contract relating to additional cost of testing is applicable to these additional tests that are to be made.

Mr. ROBACK. Excuse me; I didn't mean to interrupt you, General Thurman, but just to follow the thread of your thought, does not the contract provide that if there are samples showing discrepancies with the specifications, that the contractor will not only submit additional samples for retesting but that he will bear the expense of them?

General THURMAN. I think it does; yes.

Mr. ROBACK. So that when you agree to pay him for those additional samples, you have done something beyond the terms of the contract, or else you have acceded the contention that he has complied with the specifications.

General THURMAN. I think we have done something over and beyond the contract. Our lawyers advised to that effect.

Now, if I may continue, the contractor takes a position that he has conformed to specifications and that the changes that we have required are changes to the specifications, as distinguished from changes within the specifications to make the article work. We therefore had ourselves in a position where we had to do one of two things: We either had to make an issue on it at that point, make a default termination, permit the contractor, as he undoubtedly would, to go to the Board of Contract Appeals and initiate a new procurement, or we had to agree to pay the additional cost of 50 launchers.

Now, the matter of testing was not covered in the letter that was delivered to the contractor, and we are of the opinion that the matter of testing on these will be covered by the provisions of the contract.

Mr. ROBACK. The purchase of additional preproduction samples is in effect an amendment to the purchase contract.

General THURMAN. I think that would be fairly well stated.

Mr. ROBACK. Under the original contract, 260 preproduction samples had to be submitted as part of the total purchase price so that by paying additional—rather, by buying additional samples and paying for them you have amended the procurement order, so to speak.

General THURMAN. I think that is correct.

Mr. ROBACK. Is that reflected in a specific amendment to the contract after this time?

General THURMAN. No, sir; it has not been. It is reflected in a letter to the contractor which will form the basis for a supplemental agreement, depending on whether we have to make a unilateral determination or can make a supplemental agreement.

Mr. ROBACK. Now, what was the situation with regard to the tubes? They were using Cleveland tubes for certain shipments. The Navy had waived specifications on the basis of the representation by Cleve-

land Container that the Navy erred in stating the compressive strength and also deviations were allowed in the inside and outside dimensions of the tube merely to get the contractor in a position to assemble his launchers, talking about the Navy contracts. There were waivers of specification on the compressive strength, there were some waivers on the water absorption rate, deviations on the dimensions and tolerances of inside and outside diameter. Those were the same tubes used in the Air Force contract.

Did the Air Force have to make any specific waivers or were those waivers of the Navy coinciding in some manner with the Air Force so that the same situation applied?

What I am trying to get at is—the Navy is accepting launchers with tubes made by Cleveland Container. The Air Force has found that launchers with tubes made by Cleveland Container are not satisfactory.

Colonel LAITOS. I will take that if I may, and Lieutenant Gschwing, I would like to ask you to answer that question.

Lieutenant GSCHWING. I would like you to reword that question.

Mr. ROBACK. I will break it down.

How do you account for the fact that the Navy is accepting launcher tubes or launchers made with Cleveland tubes and the Air Force found them not satisfactory? Does that go to the tube manufacturer or the launcher assembler?

Lieutenant GSCHWING. I don't really know a good answer to that one.

Mr. ROBACK. Can you answer the question with regard to the Navy waivers on the original specifications? Or what did the Air Force do about the specifications, because Cleveland is supplying a tube which is not reflected in the specifications as——

Lieutenant GSCHWING. The Air Force has requested a waiver on the specification to permit Chromcraft to use the Sonoco tubes. The Sonoco tube is equivalent to the Cleveland tube——

Mr. ROBACK. For the moment, we are on Cleveland, not Sonoco.

When those tubes, or let's put it this way: Chromcraft is stating that in building these preproduction samples, it conforms to specifications. Now, the tube that Cleveland supplies does not conform to the specifications as written.

Has the Air Force done anything to change, waive, deviate or otherwise modify the specifications on tubes?

Colonel LAITOS. No, sir. We have not changed the specifications on the tube, we have waived the specifications on the tube.

Mr. ROBACK. Have you, for example—the specification calls for a compressive strength around 7,000 pounds per square inch. The Cleveland tube that is supplied runs in the neighborhood of 4,000. Have you waived that specification that says so—have you waived that requirement?

Colonel LAITOS. What does our specification say, Lieutenant Gschwing?

Lieutenant GSCHWING. Our specification does not read 7,000, our specification reads 4,000.

Mr. ROBACK. That is the same as Navy?

Lieutenant GSCHWING. That is right.

Mr. ROBACK. In waiving specifications, you didn't have to waive your interest which is only in certain functional end results, rather than in particular characteristics of the tube, is that correct?

Lieutenant GSCHWING. That is correct.

Mr. ROBACK. Does that apply also to water absorption?

Lieutenant GSCHWING. If Cleveland Container meets the rest of the specifications, I believe.

Mr. ROBACK. You don't have any water absorption specification?

Colonel LAITOS. Yes sir.

Mr. ROBACK. Did you have to execute any waiver on that?

Colonel LAITOS. Not to Cleveland Container.

Mr. ROBACK. You are sure your specification is for water absorption?

Colonel LAITOS. That's right.

Mr. ROBACK. It didn't meet the Navy's.

Mr. EARL MORGAN. How does your specification differ from the Navy's?

Major BRASSFIELD. May I answer that?

Mr. EARL MORGAN. I think there is a difference between the water absorption specifications of the Navy and the Air Force.

Major BRASSFIELD. That is correct, sir. When the Navy first wrote their specifications, they specified 15 to 18 percent water absorption. When we wrote our specifications, we did not consider that we had that requirement so we immediately wrote our specification for 25 percent, and I understand the Navy has since upped theirs to 50 percent.

Cleveland meets that water absorption. They have some 10 percent water absorption rate.

Mr. EARL MORGAN. Cleveland tubes do?

Major BRASSFIELD. Yes.

Mr. EARL MORGAN. So that there isn't any problem there?

Major BRASSFIELD. There is no problem with the Cleveland tube, the Cleveland Container tube meets the specifications.

Mr. MORGAN. Where is the problem with the Cleveland Container tube?

Major BRASSFIELD. The Cleveland Container tube meets the individual tube specifications as we have written them. However, we have what is called a performance specification which means that these tubes not only must meet the individual requirements but they must perform satisfactorily in that configuration.

Mr. ROBACK. In other words, at the present state of your knowledge of the subject, you cannot conclude that the tubes are defective, it is the tubes as assembled; responsibility may or may not be on the part of the assembler.

Major BRASSFIELD. That is correct.

Mr. ROBACK. It would not necessarily be a reflection on the tube maker, it may or may not, but it also may or may not be a problem of the man who takes the tubes and assembles them, because the way in which you assemble the tubes makes some difference even if the tubes are good, and then are improperly assembled, they may blow up or something.

Major BRASSFIELD. That is correct. And our specification so states. The fact that the tubes may meet their individual specification does

not mean that when they are assembled into a launcher that the launcher itself is acceptable.

Mr. ROBACK. And so that when the contractor states that he has conformed to specifications, he is contending for something that he may not necessarily have demonstrated, he may not have assembled properly.

Mr. FASCELL. May I inquire could not part of that be due to the fact that you were using the phrase--equivalent.

Major BRASSFIELD. I don't understand it.

Mr. FASCELL. Your specifications speak of a specified item, "or its equivalent."

You testified you're using an equivalent.

Major BRASSFIELD. The samples, in using the Cleveland tube, the questions pertaining to the waiver of the specifications permitted Chromcraft to use a second tube.

Mr. HOLIFIELD. And that is the Sonoco?

Major BRASSFIELD. Sonoco.

Mr. HOLIFIELD. Which you are now using.

Major BRASSFIELD. Which we are now going to use.

Mr. HOLIFIELD. Going to use?

Major BRASSFIELD. Yes.

Mr. HOLIFIELD. What is the production or productive capacity of the people who make the Sonoco tube?

Are they going to be able to turn out, under the contract, enough tubes?

Mr. GIBBS. I think I can answer that.

The information we have from Mr. Stone, although we don't have the exact figures in quantities, has indicated that Sonoco will be able to take care of his requirements.

Mr. HOLIFIELD. The reason I asked the question is because there has been all along a question with the Navy of getting enough deliveries on the Cleveland tubes, apparently; and apparently the Cleveland people are the largest manufacturers of the tubes.

Mr. GIBBS. That is right, sir.

Mr. EARL MORGAN. Which Sonoco firm is this?

In a progress report of November 6, Mr. Nash refers to a Sonoco Products, Inc., Hartsville, S. C., and Sonoco Products, Inc., Los Angeles, Calif.

Does anyone know which one is correct?

General THURMAN. Mr. Prosser.

Mr. PROSSER. This particular Sonoco Co. has a laboratory in Los Angeles and a fabrication factory in South Carolina. The two work together in processing the chemicals and protecting and building the tube.

Mr. ROBACK. Do you know what the pricing on that tube is?

Mr. PROSSER. I don't have an exact price, but the last quotation was around 80 or 90 cents.

Mr. ROBACK. Do you know if that would cause the manufacturer to have an increase in price over what he anticipated when he handed in his bid? Would that be a basis for demanding an increase in price?

Mr. PROSSER. No, sir. He has no basis, because of the particular price of the contract which he was to supply. That was his problem, and he was trying to find the most economical, and he did have a

tube supplier who made a bid of 40 cents a tube but pulled out from under him and it put him in a spot; but as far as the Air Force was concerned, that was his problem.

Mr. HOLIFIELD. General Thurman, in your testimony, you give us the future, I believe, of $115.59, at the bottom of page 2, as the final result of the changes in contract.

However, further along, at the bottom of page 3 and top of page 4, you mention a price of $153.60, plus $8,660 for tooling charges.

Is that for your samples?

General THURMAN. Yes, the $153.60 item.

Mr. HOLIFIELD. That price would not apply to the production samples.

General THURMAN. That is correct. The 50 samples, not to the production articles.

Mr. HOLIFIELD. So you have made no such change in your contract for the bulk of your deliveries.

General THURMAN. That is correct.

Mr. HOLIFIELD. You would go back, in other words, as far as you know now, to the $115.59, once you have approved these additional 50 preproduction samples?

General THURMAN. That is correct, sir, with one exception in the contract, the normal clause provides that in the event of termination or partial termination of the contract, the contractor can come in and request a change in the unit price of those that remain under contract.

Now, the termination action has not been completed. The contractor may come in and ask for an additional price increase, which he can do under the contract. He won't necessarily get it, but he may come in and ask for it.

Mr. HOLIFIELD. Is there any contemplation that you will terminate the contract at this time for the convenience of the Government?

General THURMAN. No, sir.

Mr. HOLIFIELD. Are the intentions to require the additional numbers in your contract?

General THURMAN. Yes, sir; but may I refresh your recollection that we have already in the past partially terminated the contract.

Mr. HOLIFIELD. Yes, as to the reduction from 43,750 to 34,000.

There is some termination right involved there on the part of the contractor, is there not?

General THURMAN. I'm afraid I have used so many figures that I have got you confused.

There were two changes with respect to quantity, if I may refresh your memory.

One of them is the one you mentioned, which occurred while we were actually soliciting bids——

Mr. HOLIFIELD (interposing). So there is no liability on the part of the Government there?

General THURMAN. No, sir.

Mr. HOLIFIELD. All right.

General THURMAN. Second, after the contract had been awarded and it was reduced from about 35,000 to about 20,000, those figures——

Mr. HOLIFIELD (interposing). So there is a liability on the part of the Government there.

General THURMAN. Yes; we have a termination liability on those 15,000, a definite liability, although it has not been liquidated yet; and then we have a contingent liability on the 20,000, if the contractor can show that his costs on the 20,000 are increased because of a smaller number.

Mr. HOLIFIELD. Could I ask one more question there?

Getting away from the price, have your tactical needs changed? Is that the reason for your cutting the contract down from 35,000 to 20,000?

General THURMAN. Yes, sir; theoretically that is correct.

Mr. HOLIFIELD. What is the reason for that change?

General THURMAN. May I ask Mr. Bonkofsky to respond to that question, Mr. Chairman? He is a member of our directorate of supply——

Mr. BONKOFSKY. The change in the Air Force programing to date has caused a reformulation of needs, and there has been a definite reduction from the 43,000 in the past 15 months.

Essentially, you recognize that the launcher used is in war reserve, and the revised Air Force program over the past 15 months has caused the reduction in requirement in conventional ammunition; so, it is the result of the changes of the war plans.

Mr. ROBACK. What happened to the rockets?

You had those, and you have had those in excess now for 4 or 5 years.

Mr. BONKOFSKY. Yes, we have the rockets. The 2.75 FFAR was produced in 3 configurations, air to air, air to ground, and practice, with the latter being the training rocket. The excess rockets, previously produced, are being reconfigured with the training warhead and utilized for that purpose.

One has an air-to-ground type head, and another has an air-to-air type head.

With our excess rockets, we are using plaster loaded heads for proficiency training, and each year we use some so as to perform check tests on them.

Mr. ROBACK. Has your store of rockets become obsolete, that is, have you examined them as to their shelf life?

Mr. BONKOFSKY. You mean the rocket motors?

Mr. ROBACK. Yes.

Mr. BONKOFSKY. I have no indication—maybe Colonel Laitos would reply to that.

Mr. ROBACK. What is the shelf life of a rocket, Colonel Laitos?

Colonel LAITOS. This is only my opinion. I don't have the official data, but it should last from 5 to maybe 7 years under proper storage conditions and surveillance features.

Mr. ROBACK. Are you now putting out rockets for use to determine effectiveness in age?

Colonel LAITOS. There are plans for certain types of activity to take so many rockets from storage, fire them, and determine how they are standing up as to storage life and what have you.

Mr. ROBACK. Is the changing requirements for the rocket launchers based upon a program, is that a budgetary problem, or does it have anything to do with numbers of aircraft?

General THURMAN. Both budgetary and basic plan considerations.

Mr. ROBACK. Does it have anything to do with the fact that you don't have the launcher?

General THURMAN. I will ask Mr. Bonkofsky to answer that.

Mr. BONKOFSKY. I didn't hear the question.

Mr. ROBACK. Did you tailor your requirements to the practical fact that you were not getting any launcher production?

Mr. BONKOFSKY. No, sir; we did not.

As you recall, as specified in prior testimony the Air Force revised its war reserve requirements program basically from a long war to a short war type concept, and this is the reason for the large excess number of 2.75 inch rockets.

But the changes that have been formulated in the past 15 months reflect changes in world conditions, and have affected the logistics planners in formulating war plans.

Mr. ROBACK. The last time, as you may recall, Mr. Chairman, that this problem came up, it came up suddenly, when we were confronted with the Suez problem. And I wondered whether this might cause some reconsideration of the problem.

Mr. HOLIFIELD. Is there a changing tactical requirement which indicates obsolescence of this type of weapon?

General THURMAN. Would you care to answer that [addressing Colonel Laitos]?

Colonel LAITOS. It should be someone higher than me up on the staff; but, in my opinion, I don't know of any.

Mr. HOLIFIELD. In other words, for brush-fire types of wars, you might conclude that this type of a conventional weapon might still be used?

Colonel LAITOS. Yes, sir.

Mr. HOLIFIELD. Do you have any outstanding contracts for the procurement of rockets in the 2.75 variety?

Colonel LAITOS. We don't have that, but I understand there is none. Mr. Bonkofsky?

Mr. BONKOFSKY. That is right. There is no outstanding procurement for the 2.75 rockets.

As has been indicated, we have sufficient rockets in the stock to support our rocket and rocket-launcher requirements for the present.

Mr. ROBACK. Is this change in requirement that you mention resulting in a partial termination decided by the Air Staff or Joint Chiefs, or is that a supply determination?

Mr. BONKOFSKY. This recent reduction in requirements which I have referred to was passed on to the Air Materiel Command by changed war plans. We then made a summary and passed it on to the Pentagon. The Pentagon approved our recommendations and surveys, and AMC was directed to reduce the program accordingly.

Mr. EARL MORGAN. What was the timing on those events?

When did all this take place? What month? What year?

Mr. BONKOFSKY. I will have that for you, sir.

The 43,750 rocket requirement was determined in January last year. In April—22d or 23d—1957, was the time that we were computing requirements for our 1959–60 budget cycle, and at that time there was a drop in requirements reflected.

This resulted in the reduction from the 43,750 to 34,000. In the early part of this year, when the Air Force structure was revised,

AMC received the programing data. I don't have the specific date. I would say it was around January or February of this year. We received some type of factor with no specific itemized requirement of the new structure. After coordination with Headquarters, USAF, about using that for a reduction in procurement quantities, the final action was directed to AMC from the Pentagon on March 3.

Mr. EARL MORGAN. March 3?

On March 6, Maj. Gen. W. O. Senter, Director of Procurement and Production at AMC, sent a letter to Maj. Gen. Robert W. Burns, in which he stated, and I quote:

> As an urgent requirement exists in war reserve plans for this launcher, it is imperative that testing be accomplished at the earliest possible date, but in no event later than the time allotted.

The following day, March 7, a TWX was sent from Ogden Air Materiel Area to AMC, which also refers to production, and said:

> In view of Headquarters, USAF, decision, request cutback in quantity of subject launcher from 34,000 each to 20,767 * * *. This cutback is made with assumption that programing change indicated in war plan data S/L3R will not cause a significant change to war reserve mobilization quantity, and also that this launcher will not be used for proficiency training.

There seems to be a little inconsistency in the urgency of the requirement timing.

Mr. ROBACK. Is that the situation, that you wanted them less but needed them more?

Mr. BONKOFSKY. That is what——

General THURMAN. That is a very good statement.

Mr. BONKOFSKY. Less in quantity but, still, we have a requirement for the item.

Mr. FASCELL. With the probability that by January 1959, you won't need any of them?

Mr. ROBACK. Off the record.

(Discussion off the record.)

Mr. ROBACK. We might ask on the record at this time as to what the technical judgment is about the possibility of a production launcher.

Colonel LAITOS. How do you mean?

Mr. HOLIFIELD. Approved?

Mr. ROBACK. What is the outlook, your best guess, now?

Colonel LAITOS. As I mentioned, we have fired 61 in the air with these lugs attached to the bulkhead, and they all proved to hold the way they should.

We have this contact problem, I think, pretty well on the road with the soft contacts.

We feel that with these 50—and when we incorporate all these changes, they will be produced under production conditions—if these tests, when we complete them—that these tests, when we complete them by the 15th of September or thereabouts, we will be ready to release this thing to AMC for procurement.

Mr. ROBACK. With procurement, then, under the contemplated schedule, when will the deliveries be completed, if you release this thing to production after the testing period?

General THURMAN. Will you answer that, Mr. Gibbs?

Mr. GIBBS. The contract species that the delivery will commence 75 days after approval of the preproduction samples. It starts out with a quantity of approximately 500 and then builds up to a peak rate

based on the new terminated quantity of around 2,500 to 3,000, which has not been put into the contract as the new schedule quantity yet, and will not be done so until the termination action is resolved.

Mr. ROBACK. It would be reasonable, then, to expect that it would take another year beyond the approval date?

Mr. GIBBS. Approximately that time; yes.

Mr. HOLIFIELD. So, your production would start 75 days after the 15th of September, or December 1, and you would hope to receive your 20,000 by December 1, 1959?

Mr. GIBBS. That's right, sir.

Mr. ROBACK. Now, what aircraft are contemplated to use this launcher?

Colonel LAITOS. The F–100.

Mr. ROBACK. Just on the F–100?

Colonel LAITOS. Yes.

Mr. ROBACK. Are you procuring suspension, I mean pylons to hang that launcher, just for the F–100?

Colonel LAITOS. No, sir.

This will fit on the existing pylons and racks that come with the F–100 and are considered standard pylons and standard racks.

Mr. ROBACK. Are there any hundred-series aircraft that will not be able to carry that launcher?

Colonel LAITOS. To answer your question, there are some that will not be able to, but they are not scheduled to carry them. I will explain that, if I may.

Mr. ROBACK. Is my understanding correct, that the only aircraft scheduled to carry that launcher is the F–100?

Colonel LAITOS. At this stage; yes.

Mr. ROBACK. And this procurement is geared around that consideration?

Colonel LAITOS. I would like to have Mr. Bonkofsky doublecheck that.

Mr. BONKOFSKY. Yes.

Mr. ROBACK. At the time the Armament—and, by the way, have they had a name change?

Colonel LAITOS. For a matter of record or information, perhaps, in January of last year, the Air Proving Ground Command was dissolved, the Air Force Armament Center was dissolved. It has all been consolidated into one activity, Air Proving Ground Center, which is one of the centers under ARDC, so the missions have been consolidated.

Mr. ROBACK. At the time the Navy was developing this launcher, and the Air Force was considering modifying it somewhat and procuring it, there was a problem of whether ultimately that design would be satisfactory, and that was designated an interim version.

One of the reasons it was interim was because, at that time, the Tactical Air Command laid down requirements for a half and full-fire capability.

As I understand the Navy specification, they call for a ripple firing, full-firing capability, no partial firing.

What is the status of the Tactical Air Command requirement today?

Colonel LAITOS. Our requirement on this particular point, with the Tactical Air Command, is, they do not desire the half and all capability.

Mr. ROBACK. They have rescinded or departed from their previous requirement?

Colonel LAITOS. Apparently so.

Mr. ROBACK. What about the use of this aircraft—I should say, how about the use of this on the higher number aircraft, such as the 105's and 107's? That was also one of the issues that they were considering.

Colonel LAITOS. The LAU–3/A will fit the F–105, from a physical point of view, if you will, but from a tactical point of view the LAU–3/A, or, as we know this one, will not be compatible in view of the speeds and other situations of tactical operation.

Mr. ROBACK. What is the status of the 38-round development which General Mechling told us was under way at the armament center a year ago?

Is that still under way?

Colonel LAITOS. I would like to consider that as a development program, as opposed to preproduction or whatever you want to call it.

We have received 1 of the 2 development launchers, from the Standard Armament Co., of California, who is the development contractor on this laucher, and we ran a development test at the Air Proving Ground Center and experienced some serious electrical trouble with the firing.

As a result, we have sent that launcher back to the Standard Armament Co. and have forwarded many design changes to the company to be incorporated in the second launcher and bring up the first launcher to achieve the standard we think is required.

Upon receipt of the second launcher, and the first one which is being reconditioned, we will conduct additional development tests, and, if satisfactory, we will then recommend to AMC that they obtain for us 50 service-test items, so we could test these under operational conditions and under our service test conditions to see if the design is adequate, if the performance specifications are in the right ball park, and to see if it will meet the operational requirements.

Upon completion of these 50 service tests, then we will, if successful, recommend procurement release.

Mr. EARL MORGAN. Is this 38-round launcher also using a paper-type tube?

Colonel LAITOS. No. It is an all-metal tube, all-metal fairing.

This is a blueprint of the launcher [indicating]. The principle of operation is simple. It will fire in tandem. It is almost twice as long as the LAU–3/A, and you load the rockets one behind the other, in tandem; so, when it fires them, the front one goes, and the one behind follows immediately, and, essentially, that is the difference in firing.

As I mentioned, it is all metal: metal tube and metal fairing.

Mr. HOLIFIELD. That is not a disposable or an expendable launcher, necessarily.

Colonel LAITOS. No, sir. With the metal tubes, we think it can be used more than once; however, from the tactical standpoint or tactical condition, under combat conditions, we may have to jettison from the aircraft returning to home base. However, we feel that it can be used more than once.

Mr. HOLIFIELD. It will be much more expensive than the other type.

Colonel LAITOS. Yes.

Mr. HOLIFIELD. What will that run, what is the estimate?

Colonel LAITOS. I have no idea, because it is strictly in the development stage, made in a laboratory. We haven't looked at production costs.

Mr. ROBACK. It will cost more than twice as much as the 19-round?

Colonel LAITOS. Beg pardon?

Mr. ROBACK. Twice as much.

Colonel LAITOS. At least.

Mr. ROBACK. The theory is that of increasing the number of rounds with higher speeds and less accuracy, and, therefore, you have to throw out more stuff; is that it?

Colonel LAITOS. It will take care of the dispersion problem, and, of course place more explosives on the target, assuring better kill probability.

Mr. HOLIFIELD. Are these for supersonic planes?

Colonel LAITOS. Yes.

Mr. ROBACK. I'd like to ask General Thurman with regard to the problem of partial termination, these costs of partial terminations have two components——

Are there not two problems:

One, a possible demand for an increase in the remainder, and, two, the actual termination costs for the quantity that is cut out?

General THURMAN. That is correct.

Mr. ROBACK. In regard to quantity cut off, what termination cost would you have on the part of the contractor, tooling or what?

General THURMAN. Mr. Prosser, you are currently engaged in that; will you reply?

Mr. PROSSER. This cost on the quantity that it would have would be any inventory which he or his supplier has accumulated.

Mr. ROBACK. Supplies ordered, material in process, vendors' problems. Those would be the things involving termination costs?

Mr. PROSSER. That would be inventory.

Mr. ROBACK. That would be inventory. What other possible——

Mr. PROSSER. The other one is the prorated share of tooling. Another one would be his actual settlement costs such as his auditing costs, his costs of settlement of his subcontracts.

Mr. ROBACK. Administrative costs.

Mr. PROSSER. Administrative costs; yes, sir.

Mr. ROBACK. Now, what is the purpose of the preproduction clause with regard to first article approval which says that before we are going to have any production, we will approve these samples? Is it not the case that is written in there to eliminate the possibility of any termination costs, if there is a termination prior to approval?

Mr. EARL MORGAN. Prior to production.

General THURMAN. No, sir. I will pick that up, Mr. Prosser. No, sir.

Mr. ROBACK. What is the purpose of that clause?

General THURMAN. Well, I think that the two are completely unrelated in that regard. The purpose of the preproduction clause is to insure by testing of an actual sample that the article to be delivered into the inventory will in fact conform to the specifications that are laid out in general terms. That is the purpose of the preproduction.

Mr. ROBACK. Isn't a part of that purpose to prevent the manufacturer from incurring any costs, from ordering any supplies, from doing anything until he has got the go-ahead signal?

General THURMAN. No, sir. There are lead-time considerations involved in going ahead with any contract. Now, in the event that we did, as has been done here, disapprove the sample, there would be—and there was no further testing and no further changing of the article—we would have what would be the equivalent of a default termination, but where you have got before the actual test is made or complete a termination of part of the requirement, the termination is not tied in with the preproduction clause at all.

As a matter of policy, I believe, Mr. Roback, it ought not be.

Mr. ROBACK. Well, what right did the manufacturer have under the contract to incur any cost for production purposes, and this is what we are talking about.

General THURMAN. The reasonableness of that cost is a part of the criteria used in settling termination claims.

Now, let me give you a concrete example, if I may. A hypothetical case.

You have got an item where your preproduction time is, we will say, 6 months, and the lead time for large quantities on that is 12 months. The contractor, as a reasonably prudent businessman, has got to place his long-lead-time order well ahead of the time he is anticipating the approval. Now, in the event of a termination, the reasonableness of that particular action is a subject for consideration by the terminating contracting officer. If he finds as a matter of fact that lead-time requirements are such that he must do it, that will be allowed. If he finds that lead-time requirements are such that it is not reasonable, it will not be allowed.

Is that a fair statement, Mr. Prosser?

Mr. PROSSER. Yes, sir. And I think the answer to the question is the preinspection samples are not made on the basis of Government convenience termination. If there is a rejection of a sample, it would be on the default basis in which the termination would not be involved, or the Government——

Mr. ROBACK. This clause was written into the contract. You lifted this clause from the Be Ge contract. You never had this clause when you had the Weatherhead-Polan contract because at that time your concept of first article approval was a bit primitive. You didn't have enough samples written into the contract, so you accepted samples over and above the contract. You allowed them to submit more than the 20 requirement. When you came to Chromcraft, you decided you were going to need more latitude, so you required 260 rather than 20. The Navy required 150 in the Be Ge contract, but you lifted out the Navy language of the contract. And one of the sentences in that contract which has to do with production of the items states that production will not commence until the preproduction sample has been approved. Isn't that——

General THURMAN. I believe the word is "fabricated," is it not, Mr. Roback?

Mr. ROBACK. You have the word "fabricated."

General THURMAN. I think so.

Mr. ROBACK. The Navy said production of the items to be furnished under the contract shall not commence until such samples have been approved by the Government. Do you have a different significance?

General THURMAN. I think I do.

The Government will give the contractor a notice in writing of approval or disapproval of the preproduction samples within 75 calendar days after receipt by the Government of the preproduction samples and the related test reports. Pending approval by the Government of said preproduction samples, the contractor shall not commence fabrication of the production quantity called for under item 1.

Mr. ROBACK. Do you attribute a different legal or contractural significance to "fabrication" as against "production"?

General THURMAN. I would hesitate to say offhand, Mr. Roback.

Mr. ROBACK. Let us pursue for a minute what the Navy—and the Navy is not wholly clear what it intends, but all I know is what it stated to this committee, and that is this.

The sentence in paragraph A of the same clause—

referring to the preproduction clause which reads "Production of the items to be furnished under the contract shall not commence until such samples have been approved by the Government"

—means that in the event of changes or a termination prior to approval—

this means approval of the sample—

the Government will not be liable for production or change costs with respect to any launchers in excess of the 150 preproduction samples.

So, the question I raised is, if the Navy understands that clause to mean that and if that clause does mean that, are you warranted in putting any termination costs beyond the termination costs associated with the number of preproduction samples required?

General THURMAN. Well, as you point out, the Navy clause is different.

Mr. ROBACK. You use the word "fabrication" and they use the word "production." Offhand, I see no significance in that, but maybe you have intended a significance.

General THURMAN. I really couldn't answer your question offhand, Mr. Roback. I see your point, and there might be a difference between fabrication and production. I don't know.

Mr. ROBACK. The Navy dwelt on this clause as protecting the Government. They said: "We are going to see that this article is approved before we let the fellow go ahead and buy a lot of stuff." Now, you are in the position that before he was approved, you have a partial termination, you are going to pay him for a lot of stuff he ordered which he had no business ordering under the terms of the contract.

Mr. PROSSER. I think, as we stated before, the purpose of the preproduction sample clause is not in anticipation of the convenience termination.

General THURMAN. In place of the default termination.

Mr. PROSSER. It is primarily to protect us and stop production and go into default if the contractor has not and cannot produce a satisfactory article.

Mr. ROBACK. But the fact is he had no first article approval. He had, therefore, no warrant to buy anything beyond the preproduction

sample requirements. No matter what the intention was, as far as the termination possibilities, can we come in now and negotiate with the contractor for costs incurred by him in anticipation of production before he had approval? He had no warrant to do it, if I read that contract correctly.

Mr. PROSSER. As far as termination is concerned, he will not be given any consideration for claim of any rocket launcher that he has assembled or produced. He will be given——

Mr. ROBACK. How about materials on order for production quantities?

Mr. PROSSER. Raw materials that he has procured on a long-lead-time basis, materials that had been fabricated to meet his first and second delivery schedule, 75 percent. The only schedule established for him to produce and operate cannot permit him to sit back and wait until the preproduction sample is accepted before he goes out and starts his production.

Mr. ROBACK. Without prejudicing the Government's position in negotiations, can you give this committee an order of magnitude cost of termination of those 13,000 plus launchers, and this will include termination costs plus possible alternative higher prices for the balance. Give us an order of magnitude. This will be understood as not in any way committing the Government in its negotiating matters.

Mr. PROSSER. Well, at this particular stage of the termination, a figure that would be anywhere reasonable, I would say within 20 or 30 percent accurate, would be about all we can guess. It would still be on a guess basis.

Mr. ROBACK. The magnitude is of the order of $1 million; is it not?

Mr. PROSSER. Yes, sir.

Mr. ROBACK. So you will have paid out, if that magnitude proves out, you will have paid out $1 million and you will have not a single bit of hardware to show for it.

Mr. PROSSER. We will have an inventory of raw materials, and so forth, that will be a part of the inventory of the subcontractor's supplier. We made an initial ballpark guess without consulting the contractor or any of his suppliers, and we estimated the cost to the Government of termination of these 13,000 launchers to be some $750,000. There is a half million dollar cost of items terminated involved. So we were roughly figuring 50 percent of the terminated items could be recovered. Later as we went into the formal termination, we found that the contractor has been very successful in negotiating the termination costs with his suppliers. He had invoked in his purchase order certain production release controls, which he should have done, but at the time we could not go into details without exciting or tipping off the fact that we were considering termination.

Mr. ROBACK. What good are those inventories to you? Those are over and above the production quantity in balance.

General THURMAN. If I may interrupt, I think there might have been a misunderstanding of your $1 million figure. So may he continue?

Mr. ROBACK. Sure.

Mr. PROSSER. The termination cost now, as we see it, we have some 22 suppliers on which we are yet to get their firm claims will be

somewhat less than the $750,000 anticipated, and my estimate is that it would be between $100,000 and $200,000.

General THURMAN. Not a million.

Mr. PROSSER. Not a million.

Mr. ROBACK. That is aside from any possibility of increased unit costs for the remainder.

Mr. PROSSER. That is right. If we have a repricing problem which is invoked by these changes, we want to make an improvement on the item and the repricing of the remaining items and here again we can only make a guess. We figured maybe a unit price of $130 per launcher would be somewhere near what we anticipated.

Mr. FASCELL. May I inquire? Why would you have a problem on termination with respect to the purchase of inventory unless a contractor had purchased from this suppliers the full amount of raw material necessary to produce the contract?

Mr. PROSSER. That is a part of the thing. When we made our estimate of $750,000, we assumed this and now we find that under the controls that the contractor has exercised on his suppliers, that is not the case, and we will——

Mr. FASCELL. All right, sir. If the case is that he has on hand through regular supply channels enough raw material to produce the 20,000 balance, then you do not have the inventory problem.

Mr. PROSSER. That is true. The only thing we have there is that these suppliers in their quotation of their price, and to maintain the economy of the price quoted, have in many cases made the full commitment of the materials on hand purchased.

Mr. FASCELL. That would involve, then, simply a renegotiation of the unit price from the supplier on the raw material. You wouldn't be buying any inventory.

Mr. PROSSER. Unless it has been delivered and cut to certain lengths. Now, many parts of this rocket launcher, as you know, are mass-produced types and some of the suppliers on the smaller units have run complete production lines or have them in a state of completion. Those are the factors that are going to cost us; the fact you mentioned here, that when we can turn material back to the suppliers and all that is part of our termination procedures, and that will reduce considerably the termination costs.

Mr. ROBACK. The Navy advised us at the last hearing that to protect the Government fully, it was decided the contract contain a restriction limiting the manufacturer to the purchase of only enough parts to permit delivery of an initial quantity of 150 launchers. So the Navy cited that protective clause to prevent this kind of a situation. Without laboring the point any further, I guess you should consult closely with your legal personnel on the meaning and possibilities of that preproduction clause.

General THURMAN. We will do so.

Mr. FASCELL. May I inquire? Does the Air Force preproduction clause have a limitation on number?

General THURMAN. This particular one, yes, but—there is no standard one because the requirement varies.

Mr. FASCELL. But in this particular contract, the preproduction clause has a limitation as to the number of preproduction samples.

General THURMAN. Two hundred and sixty; yes, sir.

Mr. ROBACK. Theoretically, Mr. Fascell, they are not supposed to do anything beyond that number in incurring costs. Whether that is practical or not is another matter. They wrote the contract that way.

General THURMAN. We will follow your suggestion and consult with our legal counsel on that point; is about all I can say at the moment.

Mr. EARL MORGAN. Mr. Chairman, in late February of this year Mr. Prosser in a telephone call to Mr. Gibbs referred to a conversation he had with Mr. Stone. Mr. Stone advised that the capacity of Sonoco at that time would only take care of a thousand launchers per month and they wanted $40,000 more money to expand.

Can you elaborate on this discussion, Mr. Prosser?

Mr. PROSSER. Yes, sir. At that time we still had the 5,000 launchers per month production schedule and Mr. Stone was concerned over the fact that this Sonoco tube manufacturer had told him they would not be able to make that number of units. Mr. Stone was also working with several other tube manufacturers.

At that time Sonoco tube was on the same basis with other tubes, including one that the Chromcraft Corp. was attempting to develop themselves. So he approached me with the idea as to what would be the possibilities of getting a $40,000 facility to aid him to expand or allow Sonoco to expand their production so as to meet the 5,000 launcher per month schedule.

Mr. EARL MORGAN. What was the final outcome of this discussion?

Mr. PROSSER. In my discussion with Mr. Stone, he was referred to the headquarters, AMC, to discuss the possibility of a special facility, but I don't think he ever followed it up because following that discussion, the cutback came along and I think now, as he has told us informally, Sonoco can produce the launchers to meet our 2,000 or 3,000 launchers per month schedule.

Mr. EARL MORGAN. In January there was some reference made of Be Ge's ability to produce a sufficient number of tubes to take care of the Navy contract and the Air Force contract. Do you know anything about that?

Mr. PROSSER. Yes, sir. We discussed that. We had that information referred to us, that Be Ge had developed a tube. The Navy was approving it. Mr. Stone requested to contact Be Ge to see if their source of tubes could be used to augment any tube supply they may develop. He contacted them and was advised that although they had a tube that was near acceptance, the Navy had not given formal acceptance to it.

Mr. EARL MORGAN. Did Mr. Stone also relate to you in late February that Be Ge did have the production capacity to take care of both contracts?

Mr. PROSSER. I don't recall that Be Ge was mentioned. The Cleveland Container had told him that they could not take care of both Be Ge and Chromcraft production requirements. The discussion with Be Ge, as far as I know, never reached the state of determining whether Be Ge could supply Chromcraft with tubes in addition to their own requirements.

Mr. EARL MORGAN. In late January, January 24 to be exact, Mr. Prosser, you referred—you made a recommendation that the contractor consider proposing to AMC another batch of Sonoco tubes be

made up and exchanged for those made with the Cleveland tubes. Were you anticipating at that time that the Cleveland Container tubes would not be satisfactory?

Mr. PROSSER. Well, there had been some test reports made and even at the time of our submitting of the 260 production samples, there was a desire on the part of the contractor to furnish a few launchers with the Sonoco tubes in it, because of some individual tube testing that had been conducted by the Air Proving Ground Center. It indicated that this tube wasn't good. But according to the terms of the contract we had to deliver a tube that was to be representative of production quantities.

So, when we finally ran into this test problem of the launchers giving us this trouble, the contractor and I discussed it, and I think it was discussed with Eglin, and there was some desire to submit some extra Sonoco launchers. In order for the contractor to meet his delivery schedule, and also be paid for these launchers it made, it was my suggestion that we substitute 10 of these or a quantity of these Sonoco manufactured launchers for some of the Cleveland Containers' that were delivered as part of the production sample.

Mr. EARL MORGAN. General Thurman, is it possible to have a partial default termination or is it an all or nothing proposition?

General THURMAN. I think it is all or nothing, if you understand my answer as being applicable to an individual item or a number of individual items. You might have several items on a contract and default one item and not the others, but I think the answer to your question is that it is not possible to have a partial default termination.

Mr. EARL MORGAN. Mr. Prosser, the Chromcraft Co. has apparently been trying to develop a satisfactory tube with some 9 or 10 tube suppliers throughout the country. Is that correct?

Mr. PROSSER. Yes, sir. There are quite a number of them.

Mr. EARL MORGAN. Do you have any figures on the cost of that development program to the contractor and what portion of it might have been shared by the Air Force?

Mr. PROSSER. None of it to my knowledge has been shared by the Air Force except possibly expenditure of some rockets to make the few firing tests. Most of Chromcraft's analyses of tubes have been laboratory.

Mr. ROBACK. You gave them engineering support through the Air Proving Ground Center by testing the tubes. To that extent you provided Air Force funds, did you not, or did you charge these against Chromcraft's contract?

Mr. PROSSER. The charge for the very few rockets that we used in testing Chromcraft's tubes is still a matter of consideration in any negotiations we may have with the contractor. He has recognized it as a cost and we informed him it would be a cost.

Mr. EARL MORGAN. Colonel Laitos, could you give us some statistics on the costs of the tube development at Eglin? If you don't have it offhand, you can supply it for the record.

Colonel LAITOS. I think we can. I can give this much. I would like to state this. Our tube tests down there were single tube tests. I want to establish that point. They were not the 19 tubes at one time. So the tube tests that we are talking about here refer only to the tests

of a single tube at one time. And we in my opinion fired about 15 to 20, or more, of Sonoco single tubes during this test. I can furnish that information to you, the quantity and the cost.

General THURMAN. Why don't you do that.

Mr. EARL MORGAN. As of January 17, 1958, the cost was reported to be $16,615. That was reported by the——

Colonel LAITOS. Excuse me. Wasn't it $1,600?

Mr. EARL MORGAN. I have a figure of $16,615. "The cost of these to date not including overhead is $16,615. Other contractors supplying tube tests on this program have not been charged for the work." In a telegram from APGC to Air Materiel Command of that date, January 17, it supplied a cost breakdown for Chromcraft launching tube tests initiated on November 29, 1957, not including lab tests which are still in progress, and direct labor, civilian and military, no overhead, WAD, $663, 30 2.75-inch rockets, $33.50. The total cost of Chromcraft was $1,668. That is probably what you are referring to. But this other figure of $16,615 probably refers to the overall tube development program.

Colonel LAITOS. Right.

General THURMAN. We will supply those, Mr. Morgan.

(The following information was furnished subsequent to the hearings:)

DEPARTMENT OF THE AIR FORCE,
Washington, July 25, 1958.

Hon. CHET HOLIFIELD,
Chairman, Military Operations Subcommittee, Committee on Government Operations, House of Representatives.

DEAR MR. CHAIRMAN: In the recent hearing which your subcommittee held on rocket launcher procurement, the Air Force was asked to furnish the exact developmental cost to the Air Force for the paper tubes for the LAU–3/A launcher.

The Air Force expended 346 rockets ($33.50 each) for a total of $11,591. Previously the subcommittee was furnished a figure of 373 rockets; however, after a review of the records it was determined that the 346 figure is correct. The direct labor cost to the Air Force (3,070 man-hours) was $7,827, thus the total cost to the Air Force was $19,418. These costs covered the time period of June 13, 1957, to March 31, 1958.

I trust that this information will be helpful to the subcommittee.

Sincerely yours,

W. P. FISHER,
Major General, United States Air Force; Director, Legislative Liaison.

Mr. EARL MORGAN. In January 1957, Mr. Prosser, you received a letter from Chromcraft in which they referred to a potential built-in failure in this rocket launcher. Can you tell us what they were referring to in that letter?

Mr. PROSSER. They referred to several improvement ideas in this development of this launcher. They had two reasons to approach it. One, they have as a part of their contract the development of the new set of drawings. Of course, that brought out a very detailed study and they had made a complete analysis of some sample launchers that they furnished and they came up with several suggestions for improvement. One was the loading of the launcher, of the rockets in the launcher. They recommended a decal be placed there to caution the loading personnel to insert the fins in the proper relationship to the detents so they would not damage the detents. They had a

suggestion of gluing, the detent sticks to the tubes. They were more of the improvement type. Those are two I recall.

Mr. EARL MORGAN. Colonel Laitos, do you have any reason to believe that the Cleveland Container tubes used on the Navy Aero–7D are of different quality than those tubes used on the Chromcraft LAU–3/A?

Colonel LAITOS. I think they are essentially the same.

Mr. HOLIFIELD. Are there any further questions by the members? Any further questions by the staff?

If not, gentlemen, we thank you for your appearance here this morning, and if you will please supply the staff with such information that is required, we will terminate the hearings permanently.

(Whereupon, at 11:45 a. m. the hearing was concluded.)

○